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Teacher-librarian contributions to student literacy standards

Executive summary

The aim of this pilot study research was to establish whether the teacher-librarian can have a positive impact on the literacy levels of students when measured against the Year 3, 5 and 7 national benchmark tests for reading. The pilot study involved investigating the activities of four teacher-librarians in a mix of government and non-government schools. The pilot study comprises of five sections - the literature review, the case study, the methodology, the findings and a final discussion. The appendices provide the evaluation methods the teacher-librarians in the pilot study used to gauge their own effectiveness and the transcripts of the interviews.

The Literature Review draws a focus to the current research regarding the contribution of the teacher-librarian to the literacy levels of students. Research from the United States and Australia indicate that positive relationships can be drawn between school libraries and student achievement. Although improved student outcomes can be drawn, the concept of student achievement is not always used consistently by the studies. The review outlines benchmark documents about the role of the teacher-librarian, the function of the school library and guidelines for staffing and funding. Concepts need to be defined to provide common understandings about literacy and information literacy. Perspectives on the teaching and integration of information literacy as a factor in the success of students to perform in today's information rich society are investigated. Information literacy is the key to independent learning and to further lifelong learning. The role of the teacher-librarian has seen many changes in catering for the information needs of students in a digital age. The school library needs to provide a connection with the whole school community and the provision of online services is a vital part of this service. This online concept goes beyond the services of a 'virtual library' but to cater for the millennial generation Web 2.0 constructs need to be acknowledged. The review investigates the various perspectives and measurement strategies that could be used by teacher-librarians to measure their effectiveness in the whole school context. To reinforce the library's position as an important part of the learning process, the school library should be able to demonstrate its alignment to the missions and goals of the whole school.

The Case Study The library in a school has many challenges to be met, and a small school library provides even more challenges. To provide a library and information service with minimal facilities, resources and part time staffing requires some divergent thinking and action. The online environment can bridge this gap in the provision of library and information services in difficult circumstances. The case study outlines the investigations and actions that were taken by the teacher-librarian in a small school to provide an online library database to improve the library and information services to the school and the school community. Information was sought from other schools which had put their library databases online and a reply came from the Brisbane School of Distance Education (BSDE). This was particularly suitable for our needs as it was an Education Queensland (EQ) school. Questions that needed to answered included:

- The processes and procedures in putting the library database online.
- The obstacles, barriers which had to be overcome in putting the library database online (for instance the changes to the website, technical expertise required, financing and budgeting, approvals from workplace supervisor).
- The advantages of the library database being online (benefits to learners, streamlining of processes).
- The ongoing maintenance issues of the online database and integrated website.

Mt Samson State School was also part of the pilot program for the installation a new managed operating environment (MOE) for schools. The library database and its online component had to be compliant with the MOE configurations. Comparisons were made of library databases that could be supported by the MOE and the Libcode solution suited the school's needs best of all. The solution provided the following benefits:

- Low cost of data transfer and ongoing maintenance;
- Ease of installation;
- Ease of upgrades;
- Incorporation of web sites in the library database which is maintained with SCIS Authority files;
- Reporting facilities which provide meaningful data for the future development of the library collection;
- Adding new resources is consistently catalogued;
- Backup and file transfer to the CMEWeb are one step processes;
- Daily management is easy with access to circulation data for each day's activities;
- The connection with the local school community has been positive;
- The library OPAC is available anywhere anytime.

Investigation to gather evidence, tenacity and the support of the school administration were the three key elements that worked to bring the library database online at Mt Samson State School. The provision of reliable information and evidence to all parties aided in the final decision making and acceptance that the CMEWeb option from Libcode was a financially responsible and security conscious solution to the provision of an online library database.

The Research Methodology outlines the structure and aims of the research component of this pilot study. The aim of this pilot research was to find out if there is any evidence to support the concept that the teacher-librarian has a positive impact on the literacy levels of students. The Year 3, 5 and 7 tests were used as a benchmark of the literacy levels of students from each school. If above average levels of literacy could be established when the teacher-librarian is actively involved in the teaching and learning of the students it was important to find out what these teacher-librarians were doing to produce such achievements in the students. The pilot research investigated-

- What are the effective strategies and work practices used by these teacher-librarians?
- What measures do they use to demonstrate their effectiveness?

The pilot study also attempted to reveal the issues that may be hindering the effectiveness of the delivery of the library program and the provision of a school library service which meets the needs of the school community.

A semi-structured interview approach was utilised for this research. Using open-ended semi-structured questions allows respondents to provide insights into their feelings, opinions, and attitudes providing greater insights into the issues under investigation and allows the research to examine a topic in greater depth. The interview questions were designed to draw teacher-librarians' perceptions on the following issues:-

- Misunderstandings and misconceptions of school administrators and staff of what a library and information service can provide as well as lack of support for the teacher-librarian to provide such a service.
- Diversifying and overloading the role to provide other school initiatives. The provision of a full time library and information service, even when staffing allocation is provided is a rarity.

- Adequate funding provision for resources, infrastructure and staffing.
- The strategies that teacher-librarians use to measure their effectiveness.

The interview questions of this pilot study aimed to draw correlations, explore similarities between existing U.S. and Australian research on the impact the teacher-librarian has on student achievement and in particular, with this study, the impact on literacy levels on students within the pilot study area. To provide such evidence, qualitative research into the daily procedures, work practices and environment of the typical Queensland teacher-librarian was required.

The participants of this research project were the author of this report and four teacher-librarians from a mix of government and non-government primary schools. The schools involved are similar in socio-economic standing, with comparable student populations, facilities and support staffing allocations.

The interview questions were framed drawing on the background readings of Lonsdale (2003), Lance (2001), Henri, Hay & Oberg (2002) and Todd (2001). The semi-structured approach enabled the interviewer/researcher to probe for more information if necessary to fully answer the questions and allowed the further questioning or clarification of unexpected information (Williamson 2000). The qualitative nature of this pilot research allowed an in depth investigation of the issues from the interviewee's perspective. Though the sampling of participants was small, the open ended semi-structured interview questions revealed many similarities and recurrent themes and issues that have the potential to frame further investigation into the topic.

The Findings Comparisons and some possible conclusions have been drawn from the evidence provided in the interviews with the respondents of the four schools involved in the pilot study, their responses to the Rubric for Appraising an Information Literate School Community (The Rubric), (Henri, Hay and Oberg, 2002) and the results of the Year 3, 5 and 7 Reading test results available on each of the schools' websites. Many similarities of good practice were outlined by all of the teacher-librarians in the study, including –

- A strong conviction from each teacher-librarian that they had a positive impact on the literacy levels of students;
- The work they did with the classes in a teaching role always took a priority;
- The provision of information and resource delivery for teachers was a high priority;
- Making the library accessible by providing opening times outside of school hours and making the library an inviting space was also important.

Similar issues were mentioned by the teacher-librarians which they perceived hampered the successful operation of the school library. Only the issues common to all respondents are summarised here-

- Time to get everything done was seen as the greatest barrier to the efficient management of the library.
- Adequate allocation of support staffing
- A budget which adequately meets the needs of the school curriculum

Findings from the interviews and The Rubrics draw strong links to the issues and findings of the existing research, especially to that of Hartzell (1997a), Hay (2000), Lonsdale (2003) and Todd (2001). This possibly indicates that the schools in this pilot study are experiencing the same issues and constraints that the existing research has identified. School D demonstrates many positive

characteristics that can support the concept that a well resourced and supported school library can have a positive effect on the literacy of students in the school.

The Discussion The investigations of this pilot study provide some support for the notion that a well resourced and supported school library can have a positive effect on the literacy of students in the school. For a school library to be well resourced requires an adequate budget to supply the resources to support the teaching and learning needs of the school community. Many school administrators just do not understand the value and educational potential of libraries and librarians. The discussion draws on the findings and recommendations made by Lance (2001) on the impact of school library media program on academic achievement:

- Professionally trained and credentialed school library media specialists do make a difference that affects student performance on achievement tests.
- For library media specialists to make this difference, the support of principals and teachers is essential.
- Library media specialists cannot perform their jobs effectively unless they have support staff who free them from routine tasks and enable them to participate in a variety of one-to-one and group meetings outside the library media centre.
- Library media specialists have a twofold teaching role. They are teachers of students, facilitating the development of information-literacy skills necessary for success in all content areas, and they are in-service trainers of teachers, keeping abreast of the latest information resources and technology.
- Library media specialists also must embrace technology to be effective. They must ensure that school networks extend the availability of information resources beyond the walls of the library media center, throughout the building, and, in the best cases, into students' homes. (p.3)

The discussion covers the topics of the above four points and draws correlations from the established research to the interviews and findings providing a picture of the impact the teacher-librarian has in the schools of the pilot study. In particular the positive attributes of School D are compared with the eleven characteristics of effective school libraries as recommended by Lance (2001 in Hartzell 2003).

The interviews from the pilot study indicate that all of the teacher-librarians made strong connections with the students and to most of the teaching staff. To a greater or lesser degree, they have formed good connections with the local community. The greatest variance in connection occurred in their interactions with the school administration. Creating a strong bond and working towards the shared vision of the school is a skill the teacher-librarian must develop. There should be a dynamic relationship between the teacher-librarian and the principal. The principal can be a powerful ally and can support the development of a strong library program.

It is possible to conclude from this small pilot study that the teacher-librarian can have a positive effect on the literacy of students when certain other conditions are in place. The findings from School D indicate the many other conditions which could have made a contribution to the ability of the teacher-librarian to have a positive impact on the literacy of the students at School D. The positive conditions at School D very closely align with the eleven recommendations of Lance (2001 in Hartzell 2003). The initial pilot study findings tend to confirm existing research that an actively involved teacher-librarian can have a positive effect on educational outcomes of students.

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Teacher-librarian contributions to student literacy standards

Introduction

This project from a personal perspective

This project has its basis in research, with the components of the literature review, case study, methodology, research findings and discussion. This pilot research has also served to clarify my own thoughts and provide evidence that the teacher-librarian can have a positive impact on student learning and as this project set out to establish a positive impact on student literacy.

Although this project is academic in its structure and presentation, it was also a personal journey of learning and understanding. Committed teacher-librarians in my experience are very passionate about their role. They network, share and collaborate more than any other group of professionals with which I have had contact. As the sole representative on their school staff they often work in isolation and while staff room conversation and school based professional development often revolves around teaching and pedagogy, there is no-one to share the issues of teacher-librarianship and resource management. Teacher-librarians reach out to each other and are collegial and supportive.

This isolation can be a source of despair when the teacher-librarian feels undervalued and lacks support in their school community. Todd (2001) is right in his perceptions and observations of teacher-librarians and the only ones who can save teacher-librarians is themselves. With no organised front or group strategy teacher-librarian networks can be gradually fragmented hence further reducing the base to draw from for support. To rebuild the alliances and professional standing that teacher-librarians once held is a battle that must be fought from the home front. That is each individual teacher-librarian must constantly demonstrate their value at each school. The value they demonstrate must be aligned with the missions and goals of the school. The most powerful person in this battle is the school principal, and the strategies that teacher-librarians must employ are not to defeat the enemy, but to win an ally.

The culmination of this project has provided me with some personal direction which I hope can use to make some positive changes, if only in a small way in how teacher-librarians are valued in the school environment. As I work to make my school principal a supportive ally, there will be a positive impact on the students, teachers and local school community. As I share the successes, I hope that other teacher-librarians will join me in providing a united front which demonstrates the positive impact that an actively involved teacher-librarian can have on student learning.

Literature Review

Introduction

This review draws a focus to the current research regarding the contribution of the teacher-librarian to the literacy levels of students. Research from the United States and Australia indicate that positive relationships can be drawn between school libraries and student achievement. Although improved student outcomes can be drawn, the concept of student achievement is not always used consistently by the studies. There is an interest in this pilot study to find out if there is any evidence to support the concept that the teacher-librarian has a positive impact on the literacy levels of students. The Year 3, 5 and 7 tests will be used as a benchmark of the literacy levels of students.

This review outlines benchmark documents about the role of the teacher-librarian, the function of the school library and guidelines for staffing and funding. Concepts need to be defined to provide common understandings about literacy and information literacy. Perspectives on the teaching and integration of information literacy as a factor in the success of students to perform in today's information rich society are investigated. Low levels of literacy and poor information literacy skills have a social cost with diminished employment prospects for the future workforce, or more positively information literacy is the key to independent learning and to further lifelong learning.

The role of the teacher-librarian has seen many changes in catering for the information needs of students in a digital age. The school library needs to provide a connection with the whole school community and the provision of online services is a vital part of this service. This online concept goes beyond the services of a 'virtual library' but to cater for the millennial generation Web 2.0 constructs need to be acknowledged.

In order for the teacher-librarian and the school library to provide a relevant and up to date library and information service the teacher-librarian needs to provide information that demonstrates and evaluates that their activities show an alignment with the school's mission and goals. These activities need to be demonstrated, measured and stated in a meaningful way to school administrations. This review investigates the various perspectives and measurement strategies that could be used by teacher-librarians to measure their effectiveness in the whole school context.

Defining the function of school libraries

The International Federation of Library Associations and Institutions (IFLA) is the leading international body representing the interests of library and information services and their users. IFLA/UNESCO (2006) outlines in its *School Library Manifesto* the mission, goals, funding, staffing and operations and management of school libraries. The manifesto states the school library is to 'provide information and ideas that are fundamental to functioning successfully in today's information and knowledge-based society. The school library equips students with life-long learning skills and develops the imagination, enabling them to live as responsible citizens' (p.1). The operation and management of the school library must ensure effective and accountable operations-

- The policy on school library services must be formulated to define goals, priorities and services in relation to the school's curriculum;
- The school library must be organised and maintained according to professional standards;
- Services must be accessible to all members of the school community and operate within the context of the local community;
- Co-operation with teacher, senior school management, administrators, parents, other librarians and information professionals, and community groups must be encouraged.

(IFLA/UNESCO 2006, p.3).

To bring this to an Australian perspective, *Policies: ALIA/ASLA joint statement on library and information services in schools* (2003) very succinctly outlines the place of libraries in schools. The six parts of this statement are summarised as-

1. The school library and its programs and services are integral to the goals and aims of the school;
2. The teacher-librarian is a member of the school's teaching team and has a role in planning, implementing and evaluating education policies, curricula with particular reference to the development of information literacy skills in the students;
3. The teacher-librarian is a member of the schools' management team and ensures access to the collection designed to meet the educational, recreational and cultural needs of that community;
4. School libraries should provide access to a network of library and information programs and services at the local, state, national and international levels;
5. Professional staff should be qualified in teacher-librarianship and have opportunity to undertake continuing professional development. Appropriately trained support staff should assist the professional staff;
6. Library and information programs and services in schools should be developed within the context of ASLA and ALIA endorsed statements.

The professional standing of the teacher-librarian

Within the broad fields of education and librarianship, teacher-librarians are uniquely qualified. A qualified teacher-librarian holds recognised qualifications in teaching and librarianship. 'The teacher-librarian plays a critical role in the development of information literate citizens who are lifelong learners' (*Policies: ALIA/ASLA statement on teacher-librarians in Australia*, 2003). To further elaborate and define standards for the profession the document *Policies: Standards of professional excellence for teacher-librarians* (2004) outlines three areas providing a framework which attempts to encapsulate the complex work of the teacher-librarian. The three broad areas of this framework are-

- Professional knowledge
- Professional practice and
- Professional commitment

These three broad areas are further broken down to make twelve standards which recognise that 'experienced practitioners draw from a professional palette combining knowledge, skills and attributes appropriate to their context' *Policies: Standards of professional excellence for teacher-librarians* (2004).

Transforming the role of the teacher-librarian

The school library is a changing environment and it must constantly change and respond to the needs of its clientele and changes in educational practice and initiatives. School libraries are experiencing a blurring between a real and a virtual experience. What the future school library looks like is very dependent on how teacher-librarians respond to the needs of their clientele (Hay, 2000). Hay (2000) undertook a survey of leading teacher-librarian practitioners and consultants and education system representatives to provide a list of what they considered to be the priority areas, issues and/or services that teacher-librarians should focus on in the year 2000 to secure the future of the profession. The ten broad areas of priority included:

- Leadership in the curriculum to enrich learning
- Rethinking service provision
- Knowledge management

- Contributions to reading and literacy
- Contribute to schools as networked learning communities
- Development of self
- Overburdening the TL role
- Visibility
- Problem of information rich vs information poor
- Seek strategic alliances

In regard to taking a leadership role, Hay indicates that the teacher-librarian should take a 'special' role within the school and be 'a teacher of teachers, as well as students' (2000, p.7). Teacher-librarians may have to lead as a professional development provider and focus on developing the skills of teachers especially in the areas of information literacy and to apply the strategies to 'thrive in an information rich, online world' (Hay 2000, p.7). Teacher-librarians need to demonstrate the successful incorporation of Information Communications and Technology (ICT) into teaching and encourage higher order thinking that promotes the skills in information use, rather than just information access. '...this level of servicing rationalises the distinction between a librarian and a teacher-librarian role' (Hay 2000, p.7).

Service provision must see a shift away from a collection focus to a user-centred information literacy focus. 'A professionally managed school information service was seen as essential' (Hay 2000, p.8.) and the service offered must meet the needs of the users. The teacher-librarian will need to anticipate the future needs and make provision for them and to do this the teacher-librarian will need to keep their information and skills updated.

Knowledge management is an area that the teacher-librarian can demonstrate skills and strengthen their role in the school community. The teacher-librarian will need to demonstrate their use of ICT and its integration into their everyday work; that is to lead by example. 'Teacher-librarians should also harness intranet and collaborative groupware tools to give their school a competitive edge in information sharing and knowledge creation' (Hay 2000, p.8). Making a contribution to schools as networked communities can help to move schools away from Industrial Age thinking and practices. The networked community is a sharing community and leading the way using ICTs can be used here to manage both teaching and learning.

There is much written about stereotyping in the library profession and in teacher-librarianship it is no different. The survey respondents from Hay (2000) believed 'that is partly a consequence of the damage done to the profession from within. Lack of training programs for teacher-librarians and the lack of qualified teacher-librarians, compounded by an ageing TL profession was also seen as an area of concern' (p.10). There are limited career paths for teacher-librarians; those demonstrating exceptional practice have to leave the profession to take on leadership roles.

Some of these issues are addressed by O'Connor (2007) who also acknowledges that teacher-librarians still have the issue of stereotyping to overcome. This is not so much the little old lady with bun and glasses and the large sign stating QUIET PLEASE! It is more to do with the perceptions of school colleagues who perceive the teacher-librarians' role as isolated from classroom activities. Their perception could be that the teacher-librarian occupies an 'unreal part of the school where students do not have to be motivated, managed and made to work....Their work contributions are misunderstood and underestimated.....they do not have around them a group of colleagues who understand the challenges of the position and the way in which the teacher-librarian actually performs in the role of the school' (p.6). Some teacher-librarians may isolate themselves, giving few opportunities to demonstrate their strengths to staff.

With many new technology and curriculum initiatives in schools teacher-librarians have been called upon to take on non-core responsibilities, causing an overburdening of the role. Some of the

technology roles involve the technical and network infrastructure side of the school's technology development. It is now time to reconceptualise the means and the ends and for teacher-librarians to separate the technical responsibilities from the ICT teaching and learning.

To offset the continuing marginalisation of teacher-librarians in schools they need to be visible in a positive way. The school community needs to see the work the teacher-librarian does and to break away from the traditional 'school librarian' culture. The teacher-librarian has to be proactive and dynamic to provide support for students in a knowledge-based society.

O'Connor (2007) makes suggestions for teacher-librarians for the promotion of the role in the school and in helping colleagues to understand and value the complexity of the role.

The suggestions include –

1. Working with adults – that is all staff from day one from the prep to special education teachers – from the most conscientious to the least. Work with library assistants, volunteers and community members both internal and external to the school. In the sourcing of products, resources and prices the teacher-librarian should maintain mature and effective relationships. 'Teacher-librarians are in a position to provide advice and support to teachers, based on their observations about student relations to work requirements and also about relevant resources and possible joint ventures' (p.6).
2. Working with students – the class, small group and individual all need to be catered for. There is a need to help students understand tasks that have been set and plan ways to tackle projects, and help in the decisions for the most likely sources of information. Provide access to IT resources which can provide an equalizing of opportunities for those who do not access outside the school.
3. Knowledge of curriculum and pedagogy - Schools are learning organisations and libraries are more than repositories for the storage of books. 'In most schools, the librarian is reliably at the forefront of the changes sweeping through educative practices and has an important role in planning and delivering the professional services now required for students' and 'teacher-librarians are in a relatively rare position of seeing the design and presentation of processes by which student outcomes are assessed and gauged (p.7).
4. Organisation and financial management – Library and IT budgets usually the two largest line items in school budgets. The 'location and management of resources, as well as tracking of student access, usefulness and value for investment' are also management issues of the teacher-librarian. Policies affecting human resources - Teacher-librarians are responsible for the safe and equitable working conditions of the library staff and volunteers. Definitive role statements for library positions are not consistent across employment bodies. (O'Connor 2007, p.7).

Teacher-librarians need to form strong alliances with their school principals, school community and professional associations. The teacher-librarian needs to organise professional development which includes the school principal and executive teams; present hands on ICT sessions with staff; participate in educational conferences; write articles about information literacy, information policy issues, ICT integration and knowledge management in education to publish in journals and present at conferences. Through these activities the teacher-librarian can actively promote their skills in a professional way. (Hay, 2000).

Staffing school libraries

Learning for the Future (2001) is considered a benchmark document for the management and provisioning of school libraries. Recommendations are made for the minimum information services centre staffing for teacher-librarians and support staff. For instance a school with 17 teaching and administration staff should have 1 full time teacher-librarian and 33 hours of support staffing. A school with 50 desktop or notebook computers should have 0.5 (2.5 days a week) equivalent for

network management and 0.1 (1 day a week) allocation for technical support. (p.68). The State Library of Queensland (2007) and the Queensland Department of Education, Training and the Arts (2007) both refer to and adopt the benchmarks of *Learning for the Future* as an authoritative source for school library staffing.

The invisible teacher-librarian

‘If you wonder why funds in libraries and librarians are so easily cut, the answer is this: because they can be’ (Hartzell 1997a, para. 5). It is amazing to think that educators would lack awareness on the place of school libraries and that some school administrators undervalue and ignore school libraries and see them as expendable. ‘...without significant opposition, school boards and legislators are free to vote for library reductions, and administrators working on budget spreadsheets can strike their delete buttons – all unhindered by public or professional outcry’ (Hartzell 1997a, para. 5). Hartzell sees the reasons for lack of support for the school library and school librarian as simple – school administrators just do not understand the value and educational potential of libraries and librarians and sums it up with this striking statement - ‘Mostly, it’s just a matter of indifference – and people regard as expendable those things about which they are indifferent’ (1997a, para. 7). The reasoning behind this statement is that educators are indifferent to libraries because the libraries and librarians are largely invisible to them. The value of library services is not outlined in the school principal handbook and their training programs and professional development does not investigate the potential and role of the school library. ‘Consequently, for them, the library is a support service that responds to the needs they define. They are not aware that you (the teacher-librarian) can provide new approaches to learning and teaching’ (Hartzell 1997a, para. 9). The school library lives in the shadow of the classroom as schools are defined by the activities of classroom teaching, classroom instruction, national benchmarks achievements and assessment and reporting. Teacher-librarians are not perceived as teachers who play an active part in the learning of students. Many teachers view teacher-librarians as support rather than as teaching colleagues. It is difficult to measure the effectiveness of the teacher-librarian and the quality of the contribution in the teaching and learning process. It is difficult to assess how much of the success of classroom programs might be the result of the teacher-librarian’s ideas, resourcing, services and support. Rarely are these contributions acknowledged when the success of students is demonstrated and class presentations are made. This background almost invisible role makes the library and its staff the early casualties in budget cuts.

Hartzell (1997a) reasons that teacher-librarians are often overlooked because they do not make themselves as visible as they should. They do not promote themselves well and this may be a result of their own training and education which does not emphasise the need for self promotion. This is in part in the culture of the profession; to blow one’s horn is not seen as ethical. ‘We are attracted to the notion that something of quality will enjoy support just because it is so obviously right’ (Hartzell 1997a, para. 18). Providing a good library service is not enough, and it is not that school administrators are ignoring the good work; they just have not had their attention drawn to it. ‘Research (Gast 1984 and Scott 1987) shows that most students, teachers and administrators do not perceive library media specialists and library media centres as integral to their success’ (Hartzell 1997a, para. 22). Teacher-librarians need to build a strategy to enhance visibility that goes beyond an image of indispensability, having more colourful displays, running lunch time activities or increased circulation figures. Being the ‘super librarian’ will not ensure future support from administrators or teachers. It is in the nature of teacher-librarians to encourage the exchange of information, but largely this occurs within their own circles and is not pushed outside their own groups. They do a wonderful job on sharing their innovations, resources and technical aspects of the job– but usually only among other teacher-librarians; and Hartzell (1997a) sees this as the fundamental problem and asks these questions-

- How many teachers and administrators see the published journals, participate in online lists or attend the conferences?

- How many are exposed to the problems that beset school libraries or are aware of the training and specialised needs of staff for professional development?
- How many are exposed to the information on how teacher-librarians can improve curriculum and instruction, and staff development?

Hartzell (1997a) responds to these questions with the succinct statement ‘*Very few*’ but does provide some ideas on how the teacher-librarian can become visible again. The suggestions include writing and presenting in the fields outside the library culture – to other educators and school leaders; to be visible or target those people who have the power to make a difference. Teacher-librarians have to work to change the culture of library service and to work within their professional organisations to look outwards as well as inwards. ‘It would be both ironic and tragic if school library information centres fail the schools and students they serve because administrators didn’t have enough information about them’ (Hartzell 1997a, para 28). Teacher-librarians need to break the momentum of the ‘anti-library’ movement as every teacher-librarian who is replaced with untrained staff or has their role diminished or removed is one less teacher-librarian in the resources base to save the rest. Teacher-librarians need to go about changing attitudes and gaining support to prevent further reductions and in so doing they can build a power base from which to influence the training of teachers and administrators and of future teacher-librarians. Hartzell (1997b) summarises the solution with three strategies for enhanced visibility:

- To consciously strive to build influence in the workplace
- To write articles and make presentations for educators other than librarians
- To become active in state and national library associations

Hartzell (2003) provides further evidence that libraries and librarians can make a positive contribution to student achievement, but it is school principals who often leave the library potential untapped ‘despite fifty years of research evidence that effective library media programs – when led by active, involved librarians – can have a discernable impact on student achievement *regardless of student, school and community demographics*’ (p.1). The work of Lance (2001) supports this view and identifies statistically positive correlations between student achievement on various standardised tests and school libraries displaying the eleven characteristics listed below. Lance (2001, in Hartzell 2003) has identified the characteristics of effective school libraries as: (Note: the original reference of Lance is no longer available at the link provided by Hartzell).

1. Large, varied and up to date collections.
2. One or more full-time qualified librarians.
3. Library support staff large enough and skilled enough to free qualified librarians from routine clerical duties and to allow them time to teach, to collaborate with teacher, and to engage in leadership activities outside of the library.
4. Free student and teacher access to the library during and beyond school hours.
5. Networked computers providing student and faculty access to catalogues, licensed databases and the Internet.
6. Budget adequate to support the previous five items
7. Staff commitment to teaching.
8. Individual student library use well beyond scheduled class visitations.
9. Information literacy instruction integrated into the curriculum.

Librarian characteristics:

1. Extensively collaborates with teachers.
2. Extensively involved in curricular, organisational, and operational school leadership activities outside of the library.

(p.2)

Defining Literacy

To define information literacy it may first be necessary to come to an understanding of literacy and the capabilities of a literate person. The various definitions seem to reflect differing theoretical orientations. Those who view literacy as a social process usually adopt a broader view 'which develops through exposure to literacy practices within a particular environment and which cannot be separated from its social and cultural context' (deLemos 2002, p.3). This ideal places the acquisition of literacy as a process of deriving meaning from text, including critical literacies and the interpretation of visual materials. The acquisition of literacy is a tool for communication. A narrower definition of literacy as described by deLemos (2002) is usually referred to as 'the conventional or commonsense view of literacy, defines literacy as the ability to read and write' (p.3). This definition refers to the ability to both comprehend and produce written text. The development of critical literacies and the development of advanced skills and knowledge is dependent on the ability to read and write. '...the ability to read and write provides the foundation of the further skills that are associated with the definition of literacy in its broader context. That is, the definition of a literate person as an educated person, rather than as simple a person who can read and write' (deLemos 2002, p.4).

Defining Information Literacy

The topic of information literacy has whole volumes, many internet sites and a plethora of journal articles dedicated to it. The task here is to come to some basic understanding - a definition of what information literacy is. The general consensus by way of a definition of information literacy can be summed up as 'An understanding and set of abilities enabling individuals to recognise when information is needed and have the ability to locate, evaluate and use effectively the needed information' Information literate persons are considered to be those who 'When they need information, are then able to identify, locate, evaluate, organise, and effectively use the information to address and help resolve personal, job related, or broader social issues and problems' (Bundy 2004, p.3 in Hughes et al 2005, p.2).

The Australian and New Zealand Information Literacy (ANZIIL) Framework (Bundy 2004) has its basis in the Mayer (1992) Key Competencies Report and outlines six core standards which underpin information literacy acquisitions, understanding and application by an individual. These standards identify that the information literate person –

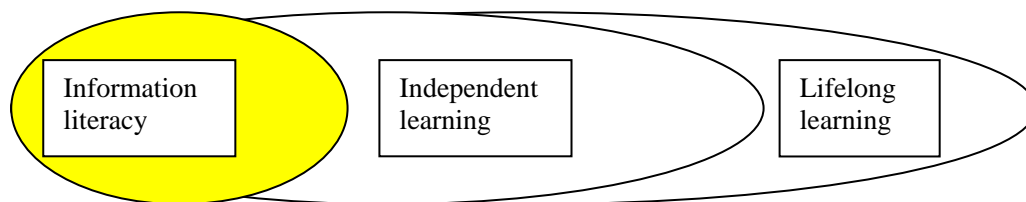
- Recognises the need for information and determines the nature and extent of the information needed
- Finds needed information effectively and efficiently
- Critically evaluates information and the information seeking process
- Manages information collected or generated
- Applies prior and new information to construct new concepts or create new understandings
- Uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information

(Bundy 2004, p. 11).

With information as the leading word in both information literacy and information communication technology (ICT) there is bound to be confusion and cross correlation between the two terms. Information literacy can be incorporated in but is broader than the skills involved in the use of ICTs. 'Information literacy is an intellectual framework for recognising the need for, understanding, finding, evaluating and using information' (Bundy 2004, p.4). This is a view supported by Bruce, Edwards and Lupton (2006) discussed further in this review. These activities may be supported with ICT skills using sound investigative methods but more importantly through critical discernment and reasoning. Information literacy can occur independently of technology use, because information literacy initiates, sustains and extends lifelong learning. Transferring the skills of information literacy into the technology development of the individual is a logical and necessary

step especially in regard to the sheer abundance of information that is available in the online environment.

The Australian School Library Association (1994) *Policy Statement – Information Literacy* supports the view that information literacy is ‘as essential to our survival as water, food, shelter and sleep’ but it is more than a survival tool as it provides us ‘with a pathway to personal growth and fulfilment’. In a world of information overload and fast moving technologies, the need to use information effectively and knowing where to locate information has in many cases become more important than acquiring factual knowledge itself. Effective learners are information literate; they are the people who can find and use information when they need it. Information literacy is as basic a survival tool in today’s society as the provision of food and shelter. The following diagram (Bundy, 2004) demonstrates that information literacy is part of a subset in the path to lifelong learning. The steps are incremental and build upon each other; information literacy is the first important step.



Relationship of information literacy to lifelong learning

(Bundy, 2004 p.5).

Information literacy in the workplace, learning and as a contributor to building informed and participative citizens is expressed in the Australian Library and Information Association (ALIA) 2006 *Statement on the information literacy for all Australians* –

Principle

A thriving national and global culture, economy and democracy will best be advanced by people who are empowered in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion within a range of cultural contexts (Alexandra Proclamation 2005).

Statement

Information literacy can contribute to:

- learning for life;
- the creation of new knowledge;
- acquisition of skills;
- personal, vocational, corporate and organisational empowerment;
- social inclusion;
- participative citizenship; and
- innovation and enterprise.

Therefore as a matter of priority, and at all levels, library and information services professionals embrace a responsibility to promote and facilitate the development of the information literacy of their clients. They will support government, and the corporate community, professional, educational and trade

union sectors, and all Australians (*Policies: Statement on information literacy for all Australians, 2006*).

Defining Literacy in a Digital World

While defining information literacy has its difficulties, other literacies may play a part in the implementation of an information literacy strategy. The concept of multiple literacies may have some impact and this concept further emphasizes the shifting construct of the term literacy. Gallego and Hollingsworth (2000) challenge the conventional ideas of literacy as those that are developed only at school, and contend that community and personal literacies are overlooked in outcomes based criteria and skills based testing.

With the proliferation of new textual forms, digital and online spaces, and the aspects of the social learning phenomena enhanced by Web2.0 technologies, strategies for developing information literacy skills in students could be compared to a constantly moving sea. Libraries have become cybraries and library media centres; the name change in recognition that many changes have occurred not only to the activities inside but in the concepts of information literacy skill development. To contend with this Kapitzke (2003) names these new skills as hyperliteracies stating that 'linear and hierarchical approaches to thinking and learning are inadequate for the webbed cyberspace of information' (p.47). Hyperliteracies as a multiliteracies approach validates the many modes of communication such as graphical novels, television commercials, and text messages as information sources. Kapitzke (2003) sees these literacies as a social construct and moreover challenges the information process as it is currently understood – defining, locating, selecting, organising, presenting and evaluating as 'devoid of any opportunity for students to examine the social context and construction of either the information "problem" or its "solution"' (p.51). Multiliteracies and hyperliteracies go beyond the school and include social, community and personal literacies; the challenge is to accept, validate, and nurture these literacies as constructs of our society.

Integrating information literacy

Tarter in Herring (2004) indicates that the increased use of the web in schools has had an impact on the way that teachers and teacher-librarians need to respond with effective teaching skills which are interrelated with the skills students need when using print and electronic information resources. Tarter sees the implications of information literacy in a digital age as going beyond schools and states that 'If a start to this process can be made in primary and secondary schools, then society as a whole will benefit. Thus there is a societal context for teaching information skills in schools as well as an educational context' (2004, p.73). (Bundy, 1998).

Taylor (2006) states 'the definition of literacy changes as society's needs change' (p.2). Literacy at one time could have been the ability to read and write, whereas today one has to be literate in a number of ways, one of which is information literacy. The word literacy for most people means reading, but there are many types of literacy that people must have. Information literacy in the digital world involves using a variety of tools to locate information and then to use the information to solve problems and make decisions. The task is to enable effective users of ideas and information. Doyle (1994 in Taylor 2006, p.4) defines information literacy by focusing on the attributes of an information literate person. She says that an information literate person is one who:

- recognises that accurate and complete information is the basis for intelligent decision making;
- recognises the need for information;
- formulates questions based on information needs;
- identifies potential sources of information;
- develops successful search strategies;
- accesses sources of information, including computer-based and other technologies;
- evaluates information;

- organises information for practical application;
- integrates new information into an existing body of knowledge; and
- uses information in critical thinking and problem solving.

Langford (1998) writes that 'information literacy is defined differently by various schools of thought' (p2). Langford (1998) questions whether information literacy is just an embellishment of our traditional understandings of literacy, or whether our evolving understandings of learning theory have led to new descriptions and applications in learning and teaching which complement the digital technologies. Also questioned by Langford is why the understandings and skills of information literacy have not become embedded into classroom practice and why only teacher-librarians understand the processes of information literacy. Langford refers to a growing body of literature that information literacy has a pedagogical link with independent learners, and information communication and technology. 'The tying of information literacy as a concept to such educational issues should alert all stakeholders in the education arena that a shift in educational thinking has occurred in that literacy is more than the ability to read and write. It may also imply that information literacy is firmly embedded in the practices and outcomes of education in the Information Age' (Langford 1998, p.4). If that were the case, then it would be natural for teachers to include elements of information literacy in their curriculum plans. It seems though that 'information literacy is capacious, defying a universal definition, and acceptance, of a place in the essential learnings of compulsory education' (Langford 1998, p.4). Other literacies, such as critical literacy, visual literacy, media literacy, functional literacy and many more have been thrown into the mix in this era of educational change. Taylor (1998) is more emphatic in understanding and defining what information literacy is. The definition and our interpretation of information literacy may have changed over time and although library skills, computer literacy, digital literacy and media literacy may be thought of as information literacy, they are not the same. These are important skills for learning but they should not be used as synonyms for information literacy. 'Information literacy is the ability to recognise a need, then access, find, evaluate, use and communicate information' (Taylor 1998, p.12). Bundy (1998) adds that information literacy is not a 'library issue' – 'it is a concern to all of those who would call themselves educators' (p.9).

No matter what these literacies are called or defined as reveals that essential learning areas should include outcomes that ensure that all learners become information literate. Langford (1998) describes much confusion over the definition and elements of inclusion for information literacy. Owen (1996 in Langford 1998) acknowledges that 'information literacy is demonstrated through our capacity confidently to challenge ideas because of our ability to access and use information effectively' (p.16) and expands information literacy to include:

- that, beyond improving study and research skills, it serves to empower; to find out and act on information;
- it as a means of personal empowerment for all, not just young students;
- besides independent and self-directed learners, interdependent learners; and to
- enrichment and enlivenment....of lifelong learning.

(Owen 1996 in Langford 1998, p.17)

For information literacy to be a natural and inclusive part of the teaching/learning process, teachers must be talking the language of information literacy. Information literacy is linked to all learning – at school and beyond to lifelong learning.

Perspectives on the teaching of information literacy

Mills (2006) points out the inadequacies of relying on the Google search engine to answer research queries, especially as many people rely on the information they get in the top few results. Anyone can publish on the World Wide Web and the information on these sites may contain bias, personal opinion and unbalanced views. 'There's a problem with information illiteracy among people.

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People find information online and don't question whether it's valid or not' (Sherman in Mills, 2006, p. 1). That's where librarians come in as they can help people get access to more authoritative information. Search engine results are done in an automated manner, and can sometimes produce unexpected results. Price in Mills underlines the importance of the skills of librarians by stating, 'No matter how smart and helpful search engines get, they're never going to replace librarians' (2006, p.1).

Perhaps the issue of evaluating the authenticity and usefulness of information found on the internet goes beyond valuing the skills of the librarian, or in schools the teacher-librarian. The public and in this case students need the skills to source and then to evaluate the validity of information for themselves. The teacher-librarian has a role to play in the development of information literacy skills in their students. Many of the materials available on the teaching of information literacy at the school level outline a step by process or programmatic approach for the delivery of information literacy. Information Literacy in these instances is broken down into a series of steps or checklist items and the student progresses through these to become information literate. This approach may see information literacy taught at a very superficial level. To have relevance to the student information literacy must take an integrated approach involving inquiry learning strategies. Edwards in Bruce, Edwards and Lupton (2006) identified four categories that capture the different ways that students search for internet information. These categories are termed 'lenses' and could be seen as stages in the students' development of information literacy skills. The student needs to develop the full repertoire of information literacy skills and be encouraged to use the most appropriate lens to find the most relevant information. Students need to experience all of the lenses and be able to reflect upon their use.

Information literacy is an integral part of the teaching and learning process and rather than try to define information literacy Bruce, Edwards and Lupton (2006) outline six frames for information literacy education and acknowledge that just as there are many ways of seeing learning and teaching, depending on your position in the framework, there are also different ways of seeing information literacy. The table below outlines the variation in the ways of seeing information literacy.

<p>How is information literacy seen in your context? I/we see information literacy as: My/our organisation sees information literacy as: My/our colleagues see information illiteracy as: My/our students see information literacy as:</p>	<p>Information professionals or scholars may see IL as: Acquiring mental models of info systems A set of skills A combination of information and IT skills Learning skills; A process; A way of learning; The ability to learn Ways of interacting with the world of information Information behaviour Part of the literacy continuum (Bruce, 1997)</p>
<p>University teachers may see IL as: Using IT for retrieval and communication Finding information Executing a process Controlling information Building up a knowledge base in a new area of interest Working with knowledge to gain new insights Using information wisely for the benefit of others (Bruce, 1997)</p>	<p>Students see information use as: Fact finding, finding the right answer Finding information to form a personal standpoint Critically analyzing information – trying to reveal values Finding information in information sources Initiating a process Building a personal knowledge base for various purposes (Limberg, Maybee, in press)</p>

Variation in the ways of seeing information literacy Bruce, Edwards & Lupton, (2006) p3.

Bruce, Edwards and Lupton (2006) in outlining their six frames of information literacy state that 'information literacy is not a set of skills, competencies and characteristics. It is a complex of different ways of interacting with information ...' (p.6).

Six frames are outlined and each has a particular view of information literacy. These frames are:

- The Content Frame
- The Competency Frame
- The Learning to Learn Frame
- The Personal Relevance Frame
- The Social Impact Frame and
- The Relational Frame

The Relational Frame presents a much deeper and integrated perspective of information literacy as it requires that assessment be designed where students are required to:

- Present different viewpoints
- Pose questions to research throughout the information seeking and use process
- Reflect on and demonstrate the development of their own viewpoint
- Reflect on and demonstrate the development of the line of reasoning in their essay argument
- Analyse bias and the use of statistics
- Use a variety of sources for different purposes
- Set their topic in historical, social, cultural and political context
- Reflect upon how they have learned about the topic through the process of their research
- Make links between the topic, the course, other course of disciplines
- Reflect on how learning about the topic many help contribute to social responsibility.

(p.14)

This is a very different emphasis than a checklist of skills! The relational frame does not see information literacy as a set of skills or competencies. It develops within the students a broader repertoire of information literacy skills. In using the relational frame, students experience information literacy in a range of ways and teaching and learning activities should be designed to enable students to develop more complex understandings. The information literacy skills are placed within the learning context; in that there is a purpose in finding the most relevant information to develop ideas and understandings for the learner.

Research into student literacy

Simpson (1990) as the Executive Director of the Australian International Literacy Year Secretariat provides some statistics on literacy rates and puts Australia's literacy standard (pre 1990 figures) at 98%; but this figure only defines literacy as the ability to read and write your own name. If literacy is to mean functional literacy in society the figure is somewhat different. 'The 1989 national survey confirmed that Australia has an illiteracy rate of between 10 and 20%' and the Australian Council for Educational Research paints a similar figure that 'between 15 and 20% of 15 years olds, at school leaving age, do not have basic competency for our society in reading and writing or mathematics' (Simpson 1990, p.216). Simpson also outlines that people learn and develop at different stages and it is possible that literacy can be developed in adults if the right programs and access is available leading to the need for more resources and emphasis to be placed on adult education and training. Many library staff are involved in adult literacy programs and provide programs and library facilities to support those in our community with low literacy levels. In 1990, Commonwealth Government funding was made available to support literacy in Australia, from

preschool to adult levels. Integrated frameworks were developed to provide tools for Australia's future literacy development to support initiatives from the local to federal levels.

Research in Australia over the past two decades into language and literacy has focused on the view that literacy is a socio-cultural phenomenon that cannot be separated from its social context. Innovative educational practices have been adopted without any requirement for research based evidence. New strategies are implemented without evidence of their effectiveness on student's learning or of the negative or positive social impacts. (deLemos, 2002).

Todd has conducted several studies, much of which is still ongoing, of the effect of integrated information skills instruction on Australian high school students. Todd's studies support the basic argument for integrated information skills for all students at all levels of schooling. His research supports the notion that policies, strategic plans, and staffing arrangements must be developed to ensure the school library media specialists (teacher-librarians) have a leading role in this effort. (Todd, 1995, p.1). Many school library media programs are increasingly based on the assumptions the information literacy is a skill for life-long learning. These skills emphasize problem solving and research processes and are more than the skills of location and access to library resources. Successful implementation of information literacy requires an integrated curriculum approach using innovative instructional methods. Assessing the success of information literacy programs has been largely based on intuitive recognition and anecdotal reporting rather than on systematic investigation. Todd set about to gather quantitative data to measure information literacy improvements in students, identifying in students their knowledge of and accomplishments in the areas of defining, locating, selecting, organising, presenting and assessing. The data collected from this study clearly suggested 'that integrated information skills instruction has a positive impact on student's abilities to identify information-handling strategies to solve their information needs in a particular curriculum content area' (Todd 1995, p.9). Although the results of the study demonstrate that integrated information skills instruction appears to have a significant positive impact on the students mastery of content and on their ability to use a range of information skills to solve problems; the study also points to the value of both a process approach and an integrated approach to information skills instruction.

Lance (2001) with a group of researchers affiliated with the Colorado State Library and the University of Denver completed four statewide studies on the impact of school library media programs on the academic achievement of U.S. public school students. The major finding of the Lance (2001) study was that 'where library media programs were better staffed, better stocked and better funded, academic achievement tend(ed) to be higher' (p.3).

The common findings of the Lance (2001) report of the impact of school library media programs on academic achievement included:

- Professionally trained and credentialed school library media specialists do make a difference that affects student performance on achievement tests.
- For library media specialists to make this difference, the support of principals and teachers is essential.
- Library media specialists cannot perform their jobs effectively unless they have support staff who free them from routine tasks and enable them to participate in a variety of one-to-one and group meetings outside the library media center.
- Library media specialists have a twofold teaching role. They are teachers of students, facilitating the development of information-literacy skills necessary for success in all content areas, and they are in-service trainers of teachers, keeping abreast of the latest information resources and technology.
- Library media specialists also must embrace technology to be effective. They must ensure that school networks extend the availability of information resources beyond the walls of

the library media center, throughout the building, and, in the best cases, into students' homes. (p.3)

Research findings in other countries suggest that school libraries do have a positive impact on student achievement; but the transference of this information to the Australian setting is not obvious. Lonsdale (2003) provides a review of the research in Australia on the impact of school libraries on student achievement. The Lonsdale (2003) review was conducted to provide a synthesis of existing research and to inform subsequent research directions in the Australian context (p.3). Lonsdale (2003) further recommends that for the research to have any real impact on school libraries it should be brought to an Australian context. Lonsdale's review (2003) identified several gaps in the research, with a lack of systematically aggregated national data making it difficult to gain an accurate picture of national trends and school staffing of libraries (p.2). The existing research does not provide information about **how** teacher-librarians could make a difference because they do not know **why** students come to the library, for example to what extent are students motivated to find information; a desire for leisure material; a desire to use the computers or do internet searching; a desire to gain work-related skills by assisting staff; a need for sanctuary from the school playground. If library staff knew the answers to these questions they could better cater for students' needs and 'as existing research suggests, potentially make a difference in terms of information skills acquisition, reading literacy skills, computer literacy and improved self-esteem' (Lonsdale 2003, p.2). Other evidence missing from the research is summarised as-

- Evidence about the relative roles of teachers and school librarians and their effectiveness in providing information literacy;
- A significant gap is evidence linking the role of school librarians to student acquisition of literacy;

Gathering evidence about the teacher-librarian population is problematic in that there is no systematically aggregated national data, making it difficult to gain a picture of staffing of school libraries. The difficulties, as outlined from anecdotal evidence and information gained from skill based surveys indicate these trends-

- A general shortage of teacher-librarians;
- The practice of schools using librarians rather than teacher-librarians, or having staff with no library or teaching qualifications at all;
- Teacher-librarians being used in classrooms as subject teachers to fill gaps in staffing;
- An ageing profession, with retirees not being replaced by sufficient numbers of new graduates; and
- Added responsibilities for teacher-librarians in terms of technology maintenance and student use of technology.
- The devolution of financial management to schools, so that each individual school library relies on the resource allocation priorities established by the school community, which may or may not place a high priority on the need for a well-staffed library.

(Lonsdale 2003, p.5).

Lonsdale (2003) sums up with 'the literature confirms the need for local, evidence-based practice if the roles of the school library and the teacher-librarian in student learning are to be valued in the way the research suggests they should be valued. Such research is an important strategic tool for raising the profile and prestige of the library professionals and for reinforcing in the minds of policy-makers and school communities the crucial contribution that school libraries make to student achievement' (p.2).

Hay (2006) through *The Student Learning through Australian School Libraries* project has been involved in a research designed to identify the hallmarks of an effective school library and to identify what the impact of such a library has on student learning. This ongoing study began in 2004 and took a 'student voice' approach in preference to the approach of Lance (2001) where analyses of school library demographic data with standardised test scores were used to identify predictors of academic achievement. (p.3). The Hay (2006) study captured the perspective and experiences of school students with regard to how their library was supporting their learning. The findings demonstrated that Australian school libraries **can** play a critical role in supporting student learning. 'Australian students acknowledge and value the support provided by the school library when their school library responds, engages, extends and empowers their lives as learners in the digital age' (p.46)

National Literacy Standards

Australian governments at the Federal and State level have made the improvement of literacy and numeracy standards a national priority. The Adelaide Declaration on National Goals for Schooling in the Twenty-first Century agreed to by all Education Ministers in April 1999, included the following national literacy and numeracy goal:

Students should have attained the skills of numeracy and English literacy; such that, every student should be numerate, able to read, write, spell and communicate at an appropriate level.

(MCETTYA 2000, p1).

All Education Ministers agreed that benchmark standards should be adopted at particular year levels for reporting literacy and numeracy. Benchmarks for year 3, 5, and 7 were established. 'The process of reporting against the agreed benchmarks that was begun in 2000 will allow monitoring over time and will provide a clear picture of literacy and numeracy levels in Australia's schools' (MCETTYA 2000, p.2).

Australia participates in the OECD Program for International Student Assessment (PISA). Developed by the OECD, PISA performs an international assessment of the skills and knowledge of 15 year-old students. In PISA reading literacy is defined as 'the ability to understand, use and reflect on written texts in order to achieve one's goals, to develop one's knowledge and potential and to participate effectively in society' (MCETTYA 2000, p.3). The assessment includes reading contexts from real life and includes text from newspapers, prose, maps, forms, tables and matrices.

The results report on reading literacy overall as well as how well the students can –

- i) retrieve specified information
- ii) interpret what they read and
- iii) reflect on and evaluate the texts, drawing from existing knowledge

(MCETTYA, 2000, p.3).

Australia performed well internationally, with one of the highest percentages of students performing at Level 5, (the highest proficiency level) with a below average proportion of students at the lowest levels. Individually all of the Australian states performed at or above the OECD average, with the ACT highest state performer.

The Value of the School Library - Measuring with Evidence-Based Practice

Williamson, Burstein and McKemmish (2000) discuss reasons why research is important to professional practice in a range of fields. The information management profession will flourish 'where information workers develop inquiring frames of mind, underpinned by an understanding of research' (p12). They can use these skills to provide better client services, evaluate policies and products and to write grant proposals. It can be a catalyst for change, or to provide evidence of best practice, that is areas of success.

Williamson, Burstein and McKemmish (2000) outline six reasons why research should play a part in professional practice:

1. to assist in understanding the problems and issues which arise in the workplace;
2. to add to knowledge in the field and/or provide solutions to problems;
3. to maintain dynamic and appropriate services;
4. to meet requirements of accountability – research is important in the age of accountability as it can assist in policy formulation and provide data to justify present funding or increased funding;
5. to maintain and improve professional status – it is generally believed that high quality research assist in improving the quality of a professions; and
6. to provide a body of research findings and theory to inform practitioners – professionals therefore need to be intelligent, critical consumers of research.

(p.12).

Evidence –based practice (EBP) should be used to gain a comprehensive understanding of what users really need and would like in a library service. The terms EBP and EBL are used synonymously when the strategy is applied to libraries. Booth and Brice (2004) define evidence-based librarianship (EBL) as 'an approach to information practice that promotes the collection, interpretation, and integration of valid, important and applicable user-reported, librarian-observed and research-driven evidence'. Although EBL is a relatively recent concept, it is increasingly necessary because of the wide range of service and resources which contemporary libraries are able to offer, the increasing complexity of user requirements and the need to justify required changes to the library's management or funding. There are five stages in evidence-based practice, as outlined by Sackett et al (in Booth and Brice 2004). These are:

1. identification of a problem or question
2. finding the best evidence to answer the question
3. appraising the evidence for validity and usefulness
4. applying the results to a specific population
5. evaluating the outcome of the intervention

Koufogiannakis and Crumley (2006) bring into consideration that research should be a part of decision making, raising several questions about the type of research that currently exists in librarianship, the areas most in need of research and obstacles that librarians may face in the conduct of research. They call for the establishment of a solid evidence base within the profession. Obstacles which hinder EBL practices such as time in the working day, experience to develop the skills, provision of adequate funding and workplace support must all be overcome. Research work needs to be published and it is acknowledged that it does take a lot of work to write and present research to publication standard. 'Librarians need to educate their employers about the benefits of in-house research and how it can improve the work they do for others, allowing the organisation to be more efficient' (Koufogiannakis and Crumley 2006, p.335). Those librarians working outside the academic libraries will have less access to library and information science journals and

databases. Librarians need to read regularly and be exposed to research in their field, otherwise they will not have a familiarity with how research is conducted and how it can have an influence in their work practices. 'If librarians lack this access to evidence, then they are already at a disadvantage when thinking about starting a research project' (Koufogiannakis and Crumley 2006, p.335).

Booth (2006) questions the value of unchanged and established library practices as well as the uncritical adoption of new technology and innovative services without research and labels them as 'evaluation bypass' (p.355). It is critical that all information professionals 'become efficient at identifying, formulating and addressing relevant questions from their own practice' (Booth 2006, p. 355). Booth draws an analogy from medical research in that the basic techniques of butchery have changed little over time, and yet surgery has evolved and developed a knowledge base because the practitioners continually question and evaluate their practices. The butcher is a trade, whereas the surgeon is a professional. 'One hopes a similar contrast exists between bookselling and librarianship' (Booth 2006, p. 356). Booth drawing on the work of Schon (1983) also points out that to derive new insights and go beyond the application of specialised theoretical knowledge is it necessary to engage in reflective practice to build new understanding from our experiences. Booth outlines the types of questions we should be asking in our practice. The questioning is more to do with the less glamorous core business issues and less to do with the new technologies which may make a more peripheral contribution. Information services professionals should be questioning the 'things that we do every day without questioning our procedures and practice. These should be the focus for our clear and present questions' (Booth 2006, p. 365).

IFLA/UNESCO (2002) provides guidelines for school libraries. Included in these guidelines are key elements to be included in monitoring and evaluating the performance in the services the school library provides. In contrast to the strategies outlined by Booth (2006) and Hay (2003) the points of evaluation provided by ILFA/UNESCO are mainly quantitative in nature producing statistical data. This data would be useful in the formation of budgets and to demonstrate productive workflows. A small mention is made of using qualitative measures such as user satisfaction surveys, focus groups and consultation activities, but no strategies are provided for the implementation of these. No use of reflective practices is included in the ILFA/UNESCO document. The concerns raised here were addressed in an email written on behalf of the IFLA committee, which states, '.....The IFLA document was published in 2002 and written sometime before that. At that time, EBP was not at the forefront of thinking and the largely quantitative approach was favoured by the committee at that time. When the publication is revised I am sure it will focus more heavily on qualitative measures. Indeed the quantitative measures are important to measure services and products. On the other hand qualitative measures are needed to measure impact and partnership outcomes' (J. Henri, personal communication, 7 June, 2007).

Todd (2001) from informal surveys provides evidence which indicate the key challenges of teacher-librarians to be-

- Impact of information technology on the role of the teacher-librarian
- Perceived lack of understanding of the nature and dimensions of the role
- Perceived lack of value, importance and appreciation
- Negative perceptions of the image of the teacher-librarian
- Perceived lack of support for the role of the teacher-librarian
- Not able to do the job I want to do a teacher-librarian
- Perceived low status
- Student learning – processes and outcomes
- Advocacy of position and role
- Funding
- Professional development

Todd (2001) is of the view that teacher-librarians cannot wait around for someone to rescue them and wave a magic wand to alleviate these concerns. He suggests that 'We need to shift our thinking to what we espouse as the real purposes of our roles, and demonstrate its power on the lives of the students we deal with. We need to move beyond the public relations approach, and focus on an evidence-based practice approach' (p.11). Todd speaks directly stating that teacher-librarians should provide 'evidence of your direct, tangible contribution to improving learning in your school should be the substance of your message, the substance of your public concern, the substance of your negotiations' (p.12). Todd (2001, p.15) also outlines eight important generalizations about the relationship of school libraries to learning, each underpinned by specific research-based evidence. They are summarised here as-

1. A shared educational philosophy centering on inquiry learning
2. A process approach focusing on the systematic and explicit development of students
3. The systemic and explicit development of students' abilities to connect with, interact with, and utilise information to construct personal meaning.
4. The development of student competence is most effective when integrated using flexibly delivered instruction.
5. Active reading programs to foster higher levels of reading
6. Foster school and public library collaborations
7. Successful school library programs have clear objectives, expectations and realistic timelines and gather meaningful systematic feedback
8. School leaders are more supportive when the evidence provided to them demonstrates people-centred, learning-centred empowerment.

Teacher-librarians should use these generalizations to design carefully planned strategies to gather evidence about the impact of their instructional role.

Ryan (2004) makes the link between using quantitative and qualitative measures to make productive gains for the school library. Benchmark documents such as *Learning for the Future* (2001) can be used by teacher-librarians to make meaningful comparisons on collection size, staffing allocations and budget allocations. The quantitative assessments can then be used to demonstrate a need for specific increases in the library. The evidence gathered by teacher-librarians provides a diagnostic tool and demonstrates that the day to day activities of the teacher-librarian contribute to the learning goals of the school.

Perhaps most practical application in providing an overall view of the effectiveness of the teacher-librarian is from Henri, Hay & Oberg (2002). They provide a rubric for appraising an information literate school community which provides a process for evaluating a library service which could take a self-evaluative or team evaluation approach. Aspects included in the appraisal are:

- The existence of an information policy
- An ICT plan is in place
- Authentic assessment enabling the development of integrated information skills
- School wide appreciation of the teacher-librarian
- Learning contexts are varied and in a variety of formats
- Information skills are taught and learned in context and across the curriculum
- Mechanisms in place for supporting the professional development of teachers for information literacy

The Millennial Impact

To the students of today online technologies is an integrated part of their lives. Prensky (2001) delivers some statistics which convey the difference between this new generation and the one from

which many of us have come. The average college graduate will have spent less than 5000 hours of their lives reading, but they will have spent over 10 000 hours involved in video games and 20 000 hours watching television. Australian students are among the world's most 'switched on' according to a survey conducted by Programme for International Student Assessment (PISA) of computer use in OECD countries. In summary the survey showed –

- 94% of Australian pupils had access to a home computer for schoolwork, compared to the OECD average of 79 %.
- 100% of Australian students had access to a computer at school.
- The students were avid users of the internet. 74% used the internet to source information, compared to the OECD average of 55%.
- 90% were confident in using the internet.
- Australian students were the highest users of computers for word processing at 70%, but just 10% reported frequent use.

(Schleicher, 2005).

The integrated use of technology devices is an integral part of a student's life and they think and process information fundamentally differently. Prensky refers to these students as 'digital natives'; that is they are native speakers of the digital language of computers, video games and the Internet. The new methodologies need to be less step by step, moving faster and in parallel, with more random access. The content needs to be digital and technological and should include the ethics and languages that accompany them (Prensky, 2001).

Students, learning and service delivery with Web 2.0 technologies

Web 2.0 technologies are fast evolving, largely free and connect with today's earners. Tim Berners-Lee comments on the semantic web as a new way of thinking in the collaborative arena of blogs and wikis. 'The original thing I wanted to do was make it a collaborative medium, a place where we can all meet and read and write...Collaborative things are exciting, and the fact people are doing wikis and blogs shows they're [embracing] its creative side' (Carvin, 2005).

Allison (2005) after involvement with the High School Online Collaborative Writing where students connected with reading and writing in a wiki described the experience as 'It all feels remarkably new, yet at the same time deeply connected with the experience of reading and writing across time'.

Schools having the technology to make these connections is one issue, but the concern here relates to Prensky's digital native divide that is explained also by Elliot (2005) where 'today's young people live in a world where digital technologies are embedded in most aspects of their lives – except in their classrooms'. Much of the use of ICTs in the classroom is peripheral has not had a significant impact on learning and teaching in the classroom context. '...new technologies are added to traditional teacher centred models of instruction' (Heale, 2004 in Elliot, 2005 p. 3). Technology enhanced learning is here to stay and will play an ever increasing role in students collection of information, delivery and presentation and communication. Elliot (2005, p3) acknowledges the focus in current literature and increasingly practice is on:

- a) encouraging teachers to embrace ICT's and see them as an integral part of school and classroom culture,
- b) exploring how ICTs can best support and extend learning, and
- c) bridging or overcoming the 'digital divide'.

Students are comfortable in a social, collaborative digital culture. Many teachers are not. 'This is a looming "culture clash"...and we ignore it at our peril' (Elliot, 2005 p.5). The challenge according to Elliot is to achieve a cultural and paradigm shift – to make ICTs blend into the background.

Students who interact online develop hypertext minds according to Prensky (2001) – ‘it’s as though their cognitive structures are parallel, not sequential’ (p.10) and ‘digital natives crave interactivity’ (p.10). Many teachers today did not have the same access to or knowledge of technology as they grew up. They have a different set of tools to access information in that they may print their email or use a telephone directory to find a phone number. Richardson (2006) reinforces this growing divide – ‘the bad news is the Read/Write web threatens to make these differences between teachers and learners even more acute. Whereas students are open to the ways of new technologies, schools by and large are not’ (p.7).

Richardson (2006) discusses a range of technologies which are easy to use, mostly free or open source and can be integrated easily into the practices of teaching and learning from primary to tertiary levels. The methodologies he outlines are pedagogically sound and support a constructivist, problem solving approach to education. They support a collegial learning atmosphere where teachers and students can learn together. Richardson’s toolbox consists of weblogs, wikis, rich site summary (RSS), aggregators, social bookmarking, online photo galleries and audio/video-casting.

The Virtual Library

The online environment of the library is described as a paradox by Margolis (1996) as ‘libraries....increase their materials, their books, magazines, videos, etc. and at the same time and with the same motivation, they are working to tear down the walls by providing a new “virtual” access to their storehouse resources. The same motivation that propels libraries to buy more books, to build more buildings, to have more things is also propelling them to use technology to reduce the size of reference collections and to tear down the walls that on occasion have provided barriers to access’ (p.31-32).

The provision of virtual library services includes access to the library’s own database as well as the inclusion of gateways to internet accessible catalogues and databases. These provide more than access to bibliographical information, but provide full-text databases and full-text digital resources such as electronic journals and e-books. The latest trend in providing online access is the integration of the internet’s resources and services into the basic library functions. The internet and the virtual library has had an impact on the K-12 environment. With teachers and students discovering databases, resources, lesson plan collections and colleagues with similar concerns this connectivity is developing learning communities of teachers as learners (Saunders, 1996).

The librarian of today cannot think of a library without involving technology but the question of why a library should provide a virtual or online service could be provided in the words of Crawford (2000) ‘Technology does not define today’s library, and it won’t define good libraries in the future. Technology provides tools; librarians use those tools...Effective librarian will use changing technology without letting the tools take over’ (p. 50). Good libraries are a part of the community, reflecting local needs and serving today’s users – libraries should serve their communities.

Levine (2002) author of the blog ‘*The Shifted Librarian*’ sees the Net Generation as those who will have the biggest impact on how libraries deliver their services. They want information to come to them and ‘it’s going to have a big impact on how they expect to receive library services ...librarians have to start adjusting now. The library has to become more portable or “shifted”’ (5/20/2004; 4:24:41 PM.). No amount of technology will ever replace the physical library with its books and personalised services, but libraries need to concentrate also on the extras in their services to remote patrons.

Brooks (2007) explores the ideas of technology, the millennial generation and popular culture and the effect these have had on the library, coming to the conclusion that ‘While the traditional library might be shrinking, the school library of the new millennium is one that welcomes technology and

popular culture and has a vital role to play in young people's education' (p.26). Teacher-librarians can only make this happen if they 'insist upon recognition, infrastructure, policies and support.' To make lifelong learning a virtual reality they must 'embrace both conventional and contemporary pedagogical practices and interface with young people and their culture' (p.26).

The students of today need quickly accessible, reliable learning resources that are available to them anytime, anywhere. A high quality virtual library will provide better information faster than a general internet search. A virtual library can:

- Deliver useful and accessible resources that is appropriate to studies, authoritative and reliable
- Reinforce the library's position as an important part of the learning process
- Help students become adept, confident users of all types of information
- Provide library resources in a cost-effective scalable manner, allowing for the introduction of new and better resources and the elimination of obsolete tools.

(Reasons for offering a virtual library, 2007)

Conclusion

Student literacy is an issue of national importance. The success of our students in the achievement of acceptable reading standards sets them on the path to future achievement so that they can take their place as active life long learners and informed citizens making contributions in our communities.

This review has explored some of the issues in the achievement of student literacy, with a particular emphasis on the positive impact that an actively involved teacher-librarian can have. The provision of information services in a digital community is fast evolving. The inclusion of the most recent research which was accessible from the United States and Australia was used in this review and there are indications that positive relationships can be drawn between school libraries and student achievement.

This review identified benchmark documents about the role of the teacher-librarian, the function of the school library and guidelines for staffing and funding. The defining of concepts to provide common understandings about literacy and information literacy was made. Background information about the National Year 3, 5 and 7 tests used to provide state and national average scores of students in Reading, Writing and Numeracy was provided. The teaching and integration of information literacy can be perceived as a key factor in the success of students to perform in today's information rich society. The teaching of information literacy was placed under the microscope; deepening our understanding of the concept and allowing us to implement and embed information strategies into teaching practice.

The review provided the information for the framing of the questions for the pilot study interviews. It was important to investigate the relevance of the literature review to the circumstances of the teacher-librarians in this pilot study. The review exposed the difficulties that teacher-librarians face in redefining their role in an evolving information environment. While literacy in an information age has been recognised as a necessary skill for students, the role of the teacher-librarian and the provisioning of school library support services has not seen the same level of recognition. In a world of books and traditional learning the place of the library was clearly understood – providing a service and a store of books for recreation and information. The needs of the students of today go beyond that. Literacy and information literacy have been redefined to encompass the digital world and now include terms such as critical literacy, multiple literacies and hyperliteracies; libraries have been redefined as cybraries.

The role of the teacher-librarian has seen many changes in catering for the needs of students in a digital age. The school library needs to provide a connection with the whole school community and the provision of online services is a vital part of this service. This online concept goes beyond the services of a 'virtual library' but to cater for the millennial generation Web 2.0 constructs need to be acknowledged.

The school library cannot be supported for its intrinsic value alone. The impact of the library and the teacher-librarian's activities need to be measured and reported. The teacher-librarian does not only have a responsibility to the students, but to the wider school community. The most highly valued libraries and teacher-librarians will receive the support of the school and its community. The teacher-librarian needs to utilise evidence-based practice to measure their value and contribution to the information literate school community. To reinforce the library's position as an important part of the learning process, the school library should be able to demonstrate its alignment to the missions and goals of the whole school.

A Case Study: Two schools making connections with the community

Introduction

A school located in a small community has many benefits and challenges. The closeness of the school with the community usually generates collegiality and a sense of belonging. The staff know each other well, communication is easy and the name of every child and many of the parents is known. There is usually a sense of moving on together, of working together for the common good of the school and the community. The smallness of the school brings other things in small numbers too – the budget, the facilities, access to support services and staffing to name a few. These challenges affect every aspect of the school.

The library in a school has many challenges to be met, and a small school library provides even more challenges. Small budgets, lack of facilities and staffing means that many aspects of school activity require some compromises. Small schools do not have separate or designated library spaces; specialised staffing is usually not available, with a shared or at the best a part time teacher-librarian allocated to the school. In many instances well meaning volunteers manage the library resources. The budget for the library is in competition with every other item that the school requires. Support staff for the library is a luxury that is shared with the office administration, classroom, learning and special needs support. The library in a small school needs to provide the same support and resourcing that the larger school libraries provide, only with less of everything.

To provide a library and information service with minimal facilities, resources and part time staffing requires some divergent thinking and action. Networking of ideas and sharing of resources makes sense, but the isolation of some small schools can make this difficult. The online environment can bridge this gap in the provision of library and information services in difficult circumstances.

This case study outlines the investigations and actions that were taken by the teacher-librarian in a small school to provide an online library database to improve the library and information services to the school and the school community.

Mt Samson State School

Background on Mt Samson State School

Mt Samson State School is in the midst of a great expansion. The school population has increased from 80 students in 2002 to 175 students at the beginning of 2007. This increase in student population has brought about a change in the role of the principal in that there is no longer a classroom teaching component to the role, to become a fully administrative one. Commensurate with the increase in student population brings an increase in class teachers, increased allocations of specialist and other support staff and additional school facilities. The growth in the school has seen a corresponding growth in the school community bringing about a change in the dynamic makeup of that community. The school is located in what was a farming community between Dayboro and Samford and also forms part of the catchment area for the North Pine Dam. Some of the original larger farms have been subdivided into mostly rural residential style estates of mainly 2 hectare lots. Some smaller parcels are located within walking distance of the school. This may give the perception that the students come from rural and semi rural backgrounds, but the statistics from the enrolments indicate that students travel from as far away as Ascot, Zillmere, Bray Park, and Lawnton and that 10% of students come from Samford and a further 13% from Dayboro. This creates an even more diverse school population. (Mount Samson State School, 2006b).

Mt Samson is a higher than average socio-economic area. At the 2001 census, Samsonvale/Mt Samson was above the Pine Rivers Shire in the following categories:

- Percentage of population with a bachelor degree or higher;
- Percentage of households with high income levels;
- Increase in income levels from 1996-2001;
- Employment levels.

(Pine Rivers Shire Community Profile in Mount Samson State School, 2006b, p.9).

School Mission Statement

The Mission Statement for Mt Samson State School states:

At Mt Samson State School we are committed to:

- High academic expectations;
- A safe supportive environment;
- Strong partnerships between our staff and the school community.

These values are captured in the school motto *Learning for Living*.

(Mount Samson State School, 2006a).

Mission, Policy and Direction for Mt Samson State School Library

From the policy and mission statements already established for the school a library mission statement was written and endorsed in 2006 by the principal and staff. The policy states that the library at Mt Samson State School will:

Provide information and support services for the provision of learning and teaching of all members of the school community-

- through the promotion of the enjoyment and appreciation of literature
- by fostering lifelong learning skills
- by developing information literacy skills

Rationale

In an information age the development of information literacy is important; where students will learn how to identify, locate, organise and present information in a manner which is clear and concise and suitable for the audience to which it is directed. Mining and sifting the various information storehouses or repositories is a skill for which the digital age student will need to become accomplished. The library, its staff and its resources play a part in the development of lifelong learning and the appreciation of reading and knowledge. The library will support the curriculum and where appropriate the professional needs of teachers through co-operative planning and teaching practices, collection development and the management of print and digital resources.

These were referred to in the compilation of these statements, but not directly referenced within the documents.

ALIA (2002) *ALIA core values statement*. Retrieved on 28 March, 2006 from <http://www.alia.org.au/policies/core.values.html>

Australian School Library Association (NSW). (2003) *School library mission statements-examples*. Retrieved on 14 July, 2006 from <http://asla.nsw.edu.au/libmisstat.htm>

School Library Association of Queensland (SLAQ). (n.d.) *Policy writing for teacher-librarians*. Retrieved on 14 July, 2006 from <http://www.slaq.org.au/SubCommittees/Murrumba/PD/whatispolicy.htm>

Trinity College (n.d.) *Policy for P.L. Duffy Resource Centre, Trinity College* Retrieved on 14 July, 2006 from <http://trinity.wa.edu.au/plduffy/re/library/lib/phil.htm>

(Ms A. 2006, *Issues and challenges of a small school library*)

Library operations in the beginning

I arrived at Mt Samson State School in 2006, as the first permanent teacher-librarian appointed to the school. My appointment was for 2 days per week. The library had been through many transitions, managers and locations within the school. Upon my arrival in the library I could see that there was much to do. There were so many needs that some priorities needed to be set. Initial steps were the physical aspects of putting the collection away in an orderly fashion, securing the database, and establishing a budget. There was a range of perceptions from staff about what the teacher-librarian could do. The way that I could see to overcome some of these difficulties was to attend to the most pressing physical needs first; work on staff perceptions and do what libraries and teacher-librarians are supposed to do – resource well, provide the best access to resources, assist where possible but to keep the core business – information literacy - in focus.

General library operations

By re-structuring the allocated aide time and the teacher-librarian time the library was able to be open and accessible for 3 days per week to provide access and assistance for individual needs before during and after school. The time allocated to the teacher-librarian is equally divided between administrative duties and teaching. Assistance with lesson planning and resources and general liaison with teachers occurs in the administrative time. There is a structured timetable with each class including preschool visiting the library every week. There is a mix of involvement from class teachers; where some teachers actively seek assistance and involvement from the teacher-librarian in their unit planning for the delivery of research, information literacy skills and literacy enhancement. Some teachers do not involve themselves with the lessons and find other tasks to complete in their classes' library time. Despite differing levels of involvement, the staff seem to be supportive of the library program.

Library program – developing information literacy

As the teacher-librarian role as gained acceptance with staff it has been easier to find out what teachers are doing with their classes. Although the units that teachers prepare now have some formality and consistency across the school the teacher-librarian has little input in the planning stages. This is mainly a time constraint and availability issue related to the part time allocation. In the Queensland Studies Authority outcome statements for each Key Learning Area, there are no specific outcomes for information literacy and ICT. So in planning with teachers it is a matter of seeing what is in their unit plans and slotting in the skills the students need to accomplish the tasks. Earlier involvement in the unit planning would be of assistance so that the ICT outcomes and the information literacy skills could be better aligned.

Note: The descriptions of the library operations are as the situation was in 2006. As 2007 has progressed the involvement of the teacher-librarian in planning and access to teachers in non-contact time has greatly improved and a more integrated approach to information literacy and assessment of skills has evolved. The teacher-librarian staffing allocation has increased to 2.5 days. While the aide time has been maintained at 10 hours a week, the library aide is not used for other activities in the school. This stability has greatly improved work flows, improved teaching relationships with staff and improved the access of patrons to the library.

Providing full time support with part time staffing

No matter what the staffing allocation for the library, staff and students need access to resources and learning support every school day. The staff have no restrictions placed on them in the amount of resources they can borrow or in their access to the library. Although they do not have access to the library database, the collection is small, well organised and in the process of being better signed. The staff only need to browse the collection for their needs and write down the barcode of any resources they take from the collections. They are not required to reshelve resources. Students have access to the library before, during and after school on any of the three days that library staff are on site.

Library management system

ALICE Solo from Softlink is used to manage the library and reading resources. This is a stand alone library system and is operated on a single workstation. At the beginning of 2006 the library workstation was operating with Windows 98, was completely standalone, with no secure logon and no backup. To update the workstation Windows XP Pro was installed and the workstation was connected to the school administration server, allowing for restricted logons and regular backups. ALICE Solo does not have different levels of access, allowing only the Master logon. The database or inquiry is not able to be viewed on other computers in the school, so all patrons must ask the library staff to perform searches and queries on their behalf. Over time, the library management system has had multiple administrators and assistants entering data. Many inconsistencies were evident in the parameters, settings and in particular the creative subject headings.

Moving from a library to an information service

The process of change

Despite the re-structuring of staff availability there was still more that could be done to better service patrons' access to the collection. Investigations were begun to place the library database online, so that it was accessible to all patrons all of the time. Another possible enhancement would be to have the teaching and planning units of teachers available in digital format when teachers were offsite. The search began for a way to provide access to the library database and a digital document repository. Early investigations were with Softlink as they were the providers of the software for the current library management system. Upgrades to a full ALICE option were possible and also a new product OLIVER and OLIVER Junior provided an online database option. Costing for the OLIVER Junior option was more within our reach. Early enquiries with our technicians indicated that it would be possible to use OLIVER Junior to service the school's OPAC terminals, which are also the computers in the lab, but the firewall restrictions would not allow the database to be available offsite.

Towards the end of 2006 indications were that our school would be part of an Education Queensland (EQ) initiative named *One School*. The focus of this initiative is the installation of a Managed Operating Environment (MOE) which would be used across all Education Queensland schools regardless of size and location. All staff and students would have logons that could be transferred to any EQ location with all workstations having the same appearance and functionality. Schools would no longer have two networks and separate servers for administration and curriculum. The only differences from one campus to another would be in the specific software that each school had purchased. We were to be a trial school for the project and as part of the process our software licencing had to be up to date and any site specific software requirements needed to be stable and needed to meet the requirements of EQ security.

Early discussions with the MOE developers were not fruitful and there was no inclination from them to include the library in the MOE roll-out. The technicians would have preferred that we use Alice with licencing options as they already knew how to set that up, but it is more difficult to manage in our circumstances because of the requirement for each user to use their personal logon each time to access an OPAC terminal. There is also a separate client installation for each workstation and the management of licences for each installation. After the issues were discussed the consensus was

that the library database could utilise Oliver Junior, with the proviso that it was to be located on another server or another workstation that linked into the administration area. The access would be for onsite users only and the possibility of the library database being online outside of the school was outside of the MOE parameters. The MOE developers wished to know the full specification requirements of Oliver Junior before they would proceed with anything. Softlink was able to provide documentation specifications, but could offer no solutions around the issue for the database being available offsite.

The discussions with the technicians made me aware that they considered a library had value only for the cost of the books stored within it and the database provided a record of that value. They did not understand that the database itself also had value to the patrons of that school site. Each school library database is a reflection of the teaching learning requirements of that site and underlying that it is a reflection of each school's priorities. A school library database is not 'one size fits all'. It is true that schools have many resources in common, but it is the value adding that occurs in the database that is a reflection of the needs and requirements of the patrons at that school location. Each school library database is constructed to meet those needs. Should the library database become corrupt or destroyed its reconstruction would demand more than the downloading of SCIS records and could not be replaced in a short period of time.

The set up and investigations of the possibilities of an online library database system was not something that the technicians wished to become involved in, and the indications were very strong that the library database should remain as it was and the MOE should be the focus of the network management. The one positive aspect of the investigations and discussions was that the school principal was still willing to see the online database go ahead.

Links to ICT development in the school

Towards the end of 2006 our principal applied for and received funds from a Federal Government infrastructure grant for schools. One of the benefits of the funding would be the improvement of ICT access in our school. Funds could now be allocated to purchase 10 new workstations for the computer lab, placing one workstation in each classroom and the provision of laptops for every full time teacher. While the library was not a direct beneficiary of these improvements, the access of students and staff to the online environment would be greatly enhanced.

Finding the solution for the online database

In a query to the listserv *Queensland Teacher-librarians* I asked if any EQ schools had gone through the process of putting their library database online. One reply came from Karen Edwards a secondary teacher-librarian from the Brisbane School of Distance Education at West End. The information provided by Karen provided a solution to the dilemma of placing our library database online.

Brisbane School of Distance Education

Visit on 13 Nov, 2006

Interview with Karen Edwards, Secondary teacher-librarian

Information was sought from a school location, with the preference for an Education Queensland site, which had gone through the process of putting its library database online with a view to finding out the following:

- The processes and procedures in putting the library database online.
- The obstacles, barriers which had to be overcome in putting the library database online (for instance the changes to the website, technical expertise required, financing and budgeting, approvals from workplace supervisor).

- The advantages of the library database being online (benefits to learners, streamlining of processes).
- The ongoing maintenance issues of the online database and integrated website.

Background on BSDE library

The School of Distance Education in Brisbane (BSDE) caters for a wide range of students from preschool (including Early Education Groups) to adults who, for various reasons, are unable to attend a day school (Education Queensland, 2004).

While the school usually maintains an enrolment of about 4000 students, the current (2006) enrolment is 3161 students from Prep to year 12. The library with a collection size of over 200 000 resources is managed by a Head of Department (HOD) (with teacher-librarianship qualifications) and staffed by three permanent and qualified teacher-librarians of secondary and primary training as well as other staff to assist with processing and borrowing. The teacher-librarians have served in country and remote areas of the state before being involved in the BSDE in Brisbane.

The perception may be that many of the students of the BSDE live on remote properties, but the clientele includes 2000 home schoolers, with less than 5% of these coming from remote areas. Many home schoolers are choosing Distance Education as a personal and lifestyle choice. Some are travellers seeing the world or the continent on a working holiday and others have an occupation which requires much travel, such as the children belonging to circus families. Some are confined to their home due to medical conditions and others have been withdrawn from regular schooling due to behavioural or emotional problems. The school also caters for adults wishing to update qualifications up to year 12 standard.

The school operates with the Parents and Citizens (P&C) group in the same way that other schools do. This is the first year (2006) that the families have been required to pay a levy for the resources they use. It is \$1 000 per student and this is to offset postage costs. All return postage is paid by the school as an incentive for the resources to be returned. There is some loss from families who fail to return resources.

Parents and students are able to visit the school and early in the year an orientation is held to assist users to become familiar with the library system and booking and loan procedures.

Library management systems – some diverse solutions

There are no hard and fast guidelines or requirements mandated by Education Queensland (EQ) as to which library management system is to be used by schools to maintain their library collections. It is not surprising then that there is a proliferation of systems and versions of systems in operation throughout the state. When schools first began the automation of their school libraries an investigation and comparison of available library management systems was carried out by EQ. The process was lengthy and the outcome and final recommendation was controversial at the time, due in part to the cost factor of the OASIS system provided by Softlink. This was a DOS based product and a later version which is Windows based is named ALICE. No financial support was provided by EQ to assist schools to purchase library management systems and schools who had already automated their libraries with other systems were not compensated. There was no requirement to automate school libraries and although ALICE was and at this stage is still recommended, it has never been a requirement that schools comply with this recommendation. To this end many EQ schools use ALICE and its earlier version OASIS, to maintain their library collections and various support groups can be found within the teacher-librarianship fraternity. It appears though that clusters of schools tend to choose the same library management system so that support can be provided in these groups. Softlink is based in Brisbane and many schools in South East Queensland tend to use ALICE. Many schools in Central, Northern and remote areas of Queensland, away from the support base of South East Queensland tend to use Libcode as the library management system

of choice. The developers of Libcode are based in Toowoomba. Some very small school schools and many in the Catholic and Independent sector use Bookmark usually for its low cost factor. Other library management systems are available but these are the main ones in use in Queensland schools.

The variety of library management systems in use makes the tracking and accountability of resource management in EQ schools an almost impossible task. Added to this is the diversity of library database storage arrangements from school to school. Some large school libraries manage their own servers, others store the library database on the curriculum server, the administration server or in some instances on stand-alone workstations. These diversities further complicate the process of providing online access to patrons who are off campus, and EQ being able to provide a solution that will fit all schools. The issue does not seem to be that EQ does not want school libraries to make their databases accessible to their patrons, but more that the problems are related to security and the complexity of the task.

Overcoming the problems at BSDE

At BSDE the library management system is ALICE and in earlier times the library OPAC was publicly available, but in a change of management practice at EQ this service was removed because it was seen as a possible threat by providing entry through the EQ firewall. The provision of online support services, including access the library database to the BSDE patrons was seen as a problem that needed to be resolved as quickly as possible; even then the process took two and half years to resolve. The staff at BSDE were left to resolve the situation after many interactions with EQ failed to provide a solution to the problem.

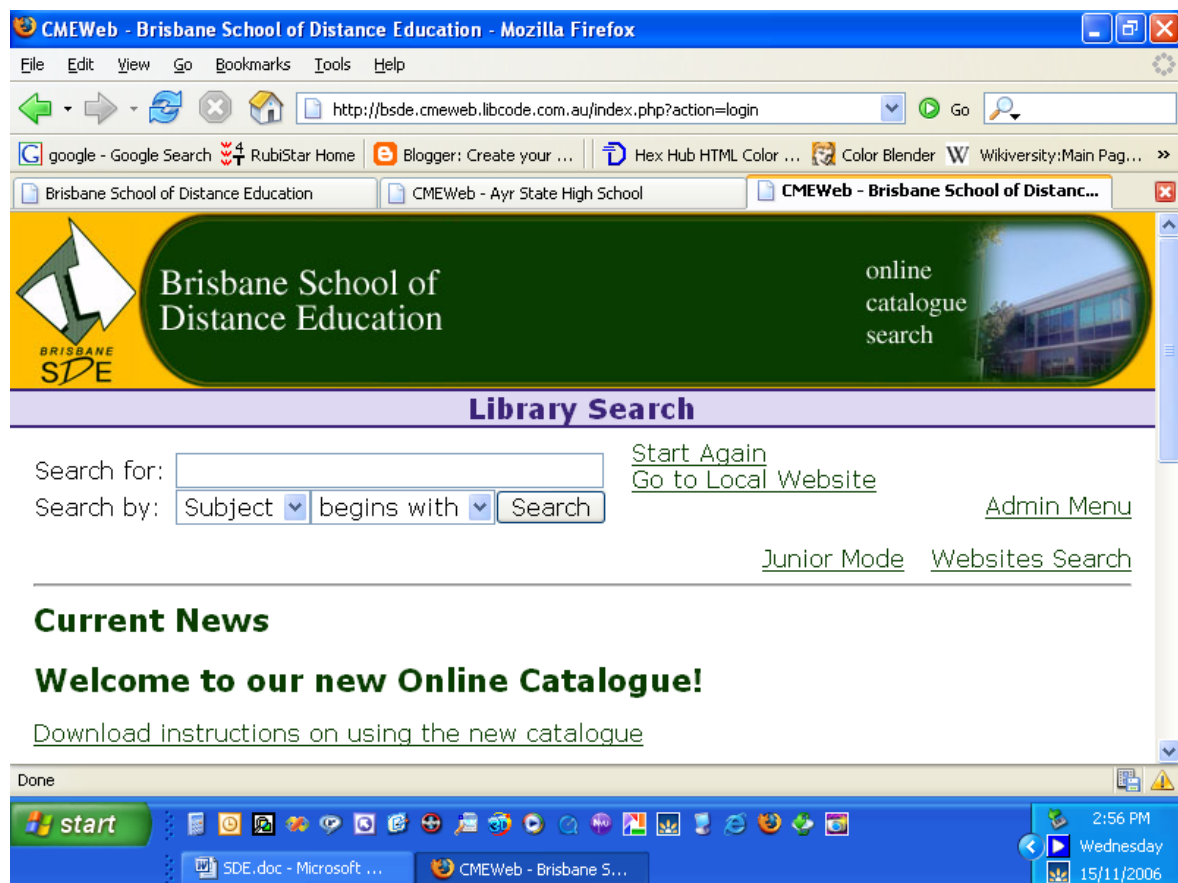
Softlink was approached but they were unable to provide a solution to the dilemma. The library staff researched other possibilities and drawing on their experience and possibly resilience after working in remote and country areas approached the developers of Libcode for a solution. Part of the solution was to house a copy of the library database on a remote offsite server, not in any way connected with EQ; but this required converting the database from ALICE to Libcode. A possible solution could have been to move the whole library database from ALICE to Libcode, so that the whole library operated under the Libcode system. This was not a problem for the teacher-librarians as they had used Libcode, but it would have entailed retraining support staff, adding a time factor for changeover and could have produced other possible unforeseen upheavals. The developers at Libcode provided another solution by converting the existing ALICE database into the Libcode format only so that it could be stored on the remote server. Time delays and retraining issues and the possible threat of illegal malicious entry to any EQ server were then removed. The BSDE database would remain unchanged, with all day to day operations of cataloguing and circulation managed by the ALICE system.

The online OPAC is updated as regularly as needed by transferring the ALICE database as a whole or just the updated entries to the Libcode server where the data is then made available to the patrons. This solution required no restructuring of information, new barcodes to be read by the new system or as mentioned staff retraining to make the changeover. While the transfer of the data requires a staff member to update the files the process is very simple and the database conversion is a seamless operation.

Now that this problem has been resolved it is possible that EQ and Softlink could have provided online access to library databases by housing a copy of any school library database on a remote server, without the need to convert the data. A yearly fee is paid for this service, and many large corporate and academic libraries already avail themselves of such a service, storing copies of their databases on servers in other continents as a security and safety measure for their valuable data.

Advantages

The patrons of the BSDE are remote or offsite users and the availability of an online OPAC provides accessibility. It is a huge timesaver allowing the patrons to view the full extent of the resources available to them. The reservation of a resource activates an email to the teacher-librarian who then organises the items to be sent. There is an added bonus that the Libcode OPAC provides and it is a huge timesaver for the teacher-librarians in regard to the sourcing and management of websites when added to the library catalogue. Libcode provides a link to Schools Cataloguing Information Service (SCIS) websites. Many schools add SCIS websites to their catalogue individually or have a separate intranet or weblinks page on their library homepage. This requires searching for the sites to add, ongoing maintenance and updating of new sites, and checking at least on a yearly basis to maintain the currency of the information. The weblinks provided on the Libcode OPAC screen provides the patron with all the SCIS weblinks without having to import them into each library database and the patron has access to every SCIS recommended site, not just those that the teacher-librarian has had the opportunity to source. The currency of this weblinks list is maintained by SCIS.



BSDE online OPAC interface. Access to SCIS websites is via the websites search link. A further advantage is that Libcode searches the Notes section of the catalogue details. Many cataloguers add reviews of resources, which can only be read when the catalogue details are in full view. With the Notes as a searchable area the reviews have more use and value to the patrons.

Customisable

The OPAC banner is able to be customised for each school, allowing school colours, emblems and mottos. Another area able to be customised is the section below the search functions. BSDE has provided a link to instructions to use the online catalogue, but it is possible to add other search aids and links here to assist the user. The advantage for the small school or for those with limited web

creation experience is that this page could form the library website, with the addition of a few relevant links and perhaps a noticeboard of events in the library. Ongoing maintenance of such a site would be minimal.

Compliance and Support

Libcode allows the import of data from SCIS using MARC format. Customer support is available on the Libcode website, the provision of an online chat with the support team, as well as direct telephone support. Help items that have been written at the school level to support staff and library patrons are shared, which builds a community knowledge base and encourages sharing of information.

Other sites with Libcode online

The BSDE is the only site that Libcode manages which password protects its catalogue access as BSDE subscribes to sites which provide weblink information which is based on a per head access. All the other online library sites managed by Libcode do not have passwords. These can be viewed at <http://cmeweb.libcode.com.au/>. The majority of the sites offering online library databases hosted by Libcode are located in Central and Western Queensland, comprising small primary schools, high schools, and Catholic schools, the Crèche and Kindergarten Association and the Cairns School of Distance Education.

Using the potential

An observation of the online library databases provided by Libcode is their consistency and ease of use. The online database template provides a link *Go to Local Website*, taking the patron back to the school's home page or library page. Most go to the school's home page. Many school websites though had no link on the home page to the Library or Resource Centre and no link to the online database. That is, there was no two way navigation or information alerting the user to the presence of the online library database from the school website or home page. It appears as though the library database is used for the convenience of school users when onsite, where the URL of the online database is the opening screen of the OPACs based in the resource centre. This does not take to full advantage the facility that an online database can provide to patrons once they leave the school complex. The patron would have to know the URL of the library database as no schools provided a link from the home page and very few from the library webpage to the online database. The BSDE was the only site observed which provided a two way link.

Further investigations

Investigations were made into the other sites that used Libcode. The Priority Country Area Program (PCAP) based in Emerald introduced a district initiative where all PCAP schools have been given the opportunity to place their library catalogues online using the CMWeb platform, provided by Libcode. The CMWeb (Concept Map Explorer) platform hosts the online library catalogue of each school. Schools using the CMWeb can be located at <http://cpap.cmeweb.libcode.com.au/>. Although schools are the primary market for CMWeb, the Banana Shire Council Community Resource Centre is also an online participant in the project. In accessing the online catalogue, the main catalogue information is absolutely secure because all online researching takes place on a web server that is in no-way connected to the library system computer. No patron information is available to be viewed online. CMWeb includes all the normal catalogue search tools such as Subject, Title, Author and Series to allow patrons to search the library catalogue (Rackemann, 2006). A Related Topics option helps researchers to explore further in the subject area search. Reservation notices can be sent by patrons. The search capabilities also include websites by clicking on the link Search in Websites Catalogue and with a quick link back to search in Library Catalogue. The websites are provided by SCIS and are loaded into the library catalogue when a subscription to SCIS Authority Files is made. Libcode provide this service to all their online subscribers on a twice yearly basis (Libcode Library Systems, 2007).

The advantage is that individual teacher-librarians and staff of small schools do not have to source curriculum related websites for each school campus.

For the schools in the Emerald District one of the advantages of each school having an online database is the enhanced network capabilities between schools. Each school can view the resources available at another school opening further prospects for resource sharing among these small schools.

Asking more questions

Contact was made with Libcode to find pricing and the process of the changeover of our database data from ALICE to Libcode. Other questions which had not been answered from the investigations and after a brainstorming session with my library aide were put to the Libcode team. Some of these questions included:

- Do we keep using ALICE for our inhouse management or is there an advantage in changing the catalogue over to Libcode for the inhouse and online management?
- What type of reports can be run?
- Does Libcode allow the printing of spine labels?
- Can subject headings be modified and created?
- Will the subject headings already in ALICE be imported?
- What is the extent of links that can be added to the Current News section of the OPAC enquiry page?
- Is it possible to make the OPAC page the central point of a library home page and have other pages following or linking to it – or would it be better to have a to and from navigation link?
- Do the barcode labels need to be changed on the existing resources?
- How do we learn about how to use Libcode?

All of the questions were answered and after pricing was received a consultation was held with the school principal. He was impressed with the online database and its search capabilities, although he admitted he did not fully understand all of it. Costing for the database changeover and ongoing support was within our budget and was less than the changeover to OLIVER Junior and its ongoing support fees. The advantages are summarised as:

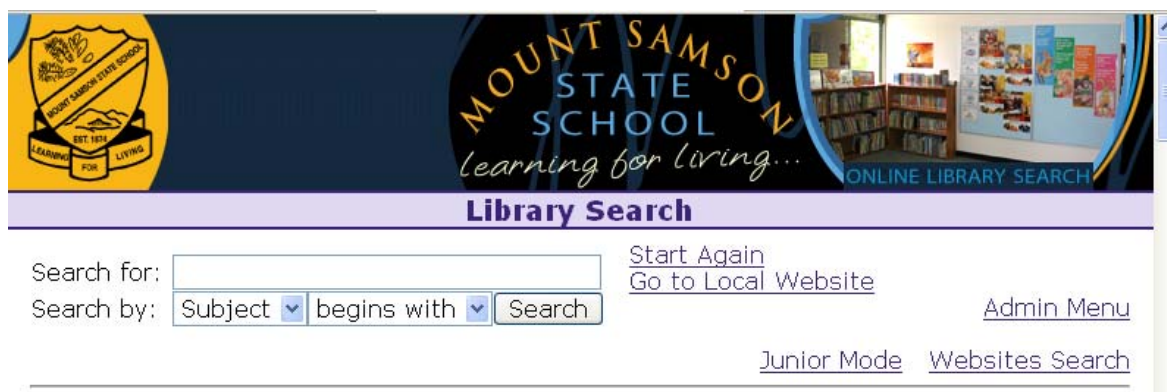
- Lower overall costs
- An online database which is secure and meets EQ firewall requirements
- A library management system which provides a better reporting structure
- Subject headings and corresponding Dewey numbers are included in the database at the time of cataloguing, therefore enhancing consistency of cataloguing.
- Upgrades occur automatically including SCIS Authority files.
- All of the queries and concerns that we had could be catered for in the Libcode system.
- A training CD was sent and access to Libcode's online training site was provided to us.
- Easily accessible staff that were very willing to answer all of our questions and provide information that would satisfy the requirements of EQ.

The changeover process

With the decision made to use Libcode for both our inhouse and online environment the next step was to get the existing database ready for the transfer process. There were still many inconsistencies in the database and as much as possible was done to tidy up the most obvious of these. A copy of the database was burnt to CD and mailed to Libcode to enable a trial conversion of data. On the return of this data it was obvious that the inaccuracies in the patron information were more than could be rectified with our staffing and time availability. A stocktake was done by a previous library manager and there were many issues left from this stocktake that were never

resolved. The patron data held records of staff and students who had left the school and there were overdue items from staff that dated back to 2003. The library had been moved to three separate physical locations in that time and in reality the missing resources could be anywhere. A decision was made after viewing the database trial that the patron data would not be included in the changeover. All student patron data would be re-entered in one download from the school administration system of student records. Staff and parent information would need to be entered manually. No patrons would therefore have overhanging overdue loans and everyone could start on a clean slate. The issue of the possible missing resources could be dealt with in a stocktake later in the year. At the end of the school year a copy of the database was mailed to Libcode for the final conversion. Only three files were needed for the final conversion – the loasis directory from ALICE, an image of the school badge and a graphic image for the online banner. The original ALICE database was kept and was still accessible to check any items we still needed to track which could still be missing. At this stage it still provided a backup for the library collection.

At the beginning of 2007 the new database software and data was installed. Some adjustments were made to the loan periods for staff. The student data was imported in a very easy transfer process and circulation of resources was ready for the first day of the school year. Graphics were emailed to Libcode for inclusion in the live version of the database. By the end of January, 2007 the library database is live and could be viewed at <http://mtsamsonsss.cmeweb.libcode.com.au>



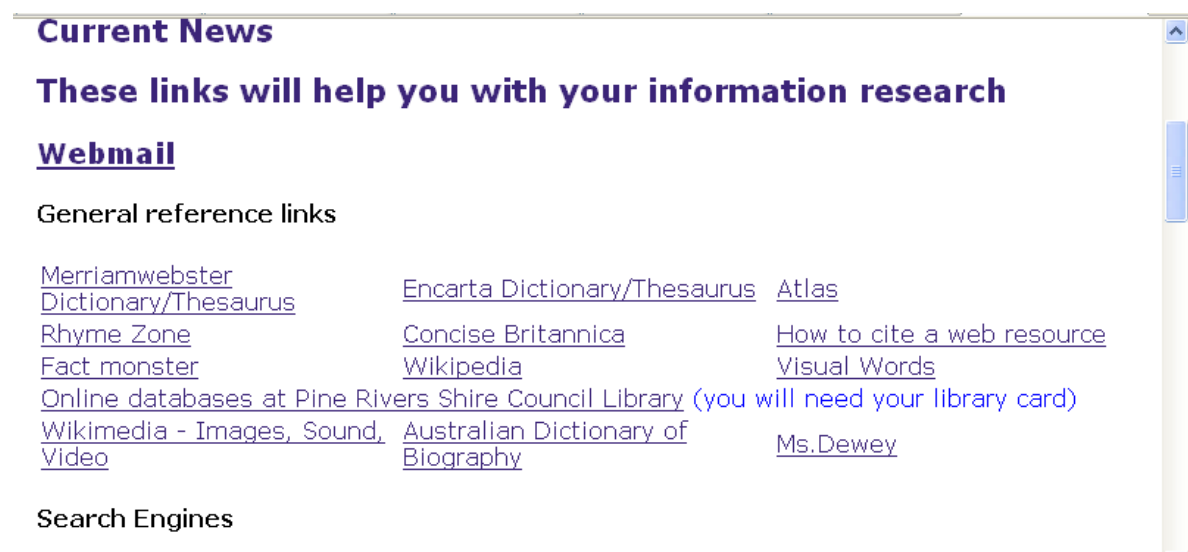
The Library database as it appears online

There was no breaking in period and no library activities were halted in the process of changing over databases. The initial problems we experienced were in adjusting to the new library program while still maintaining all the library activities. Although both of the library staff had been through the Libcode tutorials during the holiday break the difficulties were in doing the day to day operations as quickly and efficiently as they had been done in ALICE. Searching the interface, printing spin labels, adding new resources, subject headings and tweaking the system to suit our work practices were the new difficulties. It was a matter of moving slowly and discovering the full functionality of the new library system. Both staff learned from each other and maintained a positive attitude to the changes. Most of the problems we faced were in the inaccurate data already in the system and how we would go about rectifying them. The Libcode team were very supportive and answered all of our queries promptly. Early advantages that could be seen in the Libcode system were:

- The system was very quick
- Adding new items was straightforward, especially the selection of subject headings and the allocation of Dewey numbers.
- Consistency of data entry was controlled with the selection from drop down boxes.
- Importing of student data was very easy
- Exporting to the web to update the catalogue was easy and very intuitive to use.
- Backups were easy and offered options for external backups with consistent file naming conventions.

Customisations for the Mount Samson Library online database

The school has a very simple website constructed by the principal using FrontPage. It is largely inaccessible to other staff as it was located on his laptop and secured with passwords. Although I would have been granted access had I requested it, there were problems with the underlying structure of the website and to rectify these would have taken more time than I had available. I wished to provide a library presence and research pathfinders for the students. At this stage to use the CMEWeb Current News section was the easiest and most accessible option. There are limitations with this option in that only a single webpage can be constructed, but the editing is easy and the site can be managed off campus. The content for the Current News section mostly was gathered from an inhouse intranet I had constructed for the students. The intranet had been constructed with DreamWeaver with external Cascading Style Sheets. All of these transferred to the web interface of the CMEWeb.



Screenshot of the top of the Current News providing links to other Reference Sources and online databases.

Through the school newsletter, the school community was notified of the library database URL and students were instructed on how to use the search facilities and on how to place reservations.

Ready for the new school online environment

The MOE developers and technicians were informed of the changes and successful implementation of the online database. A final visit to the school was planned to ensure all facilities were in place for the MOE upgrade. The technicians were still not convinced that the CMEWeb did not breach EQ security protocols and further explanations were required to explain that the database was stored offsite at CMEWeb and that the only data that was transferred was the catalogue and no student data was included. By email I provided them with more contact information to Libcode and links to the other EQ schools which were using the service. The technicians finally made contact with Libcode staff and eventually the online library database would be included in the MOE upgrade.

The District Technician visited the school and I was able to demonstrate the functionality of the new database and that backups were occurring regularly. He was very happy with the progress we had made and installed a monitor on the school router to take a snapshot of web traffic before the MOE install. Another snapshot would be taken after the installation. The purpose was that in the future web traffic requests would be given priorities with the most urgent having the highest priority. At this stage I had not considered making changes to the computers in the lab as they were

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N0612545

going to be rebuilt in the MOE upgrade. Their homepage was still set to our internal intranet site. In light of the web traffic survey I changed the homepage of each of the lab computers to the online library database, thus bringing the library database URL higher up the list of the most visited sites for our school.

Keeping statistics

EQ school internet services and management of users is consistent across all schools. The Managed Internet Service (MIS) allows MIS administrators to allocate user logons, passwords for staff and students, email addresses, to block sites, track internet misuse and it provides statistics on users and downloads for each school site. In schools the MIS administrator is usually the most IT competent staff member.

Since the availability of our CMEWeb online catalogue data has been collected through MIS on the amount of times the site has been accessed. Previous data is not able to be collected on the number of access attempts to the intranet as the workstations in the lab were not connected to a server and the workstations were configured as a Workgroup using IIS located on one workstation and all of the other workstations drew the home page intranet from there. The data provided through MIS could be seen as a bit skewed in favour of the CMEWeb online catalogue, as each workstation has this set as the homepage when Internet Explorer is started. Data is only provided on the number of access attempts to the CMEWeb from inside the school, and the access from outside the school in the community is not tracked. If a link was provided from the school website it would be possible to track this access.

Measuring the success

After the installation of the Libcode database and the subsequent online availability of the OPAC through CMEWeb, internet traffic data was collected from the MIS. The tables presented below are in chronological order and date from the first availability of the online OPAC. All of the data is not shown here, only those that are the most downloaded sites.

18 February, 2007

URL	Requests	Downloads in MB
http://www.google.com.au/	964	5.72
http://adserver.topspeed.com/	2611	2.83
http://pictures.topspeed.com/	2730	12.30
http://mtsamsonss.cmeweb.libcode.com.au/	3217	6.07
http://block.eq.edu.au/	6610	20.12

The success of the OPAC availability is evident with the mtsamsonss.cmeweb having the second most requests. The most requested site demonstrates that the students are still attempting to access sites which have been blocked by EQ. The opening page for the internet browser was set at <http://mtsamsonss.cmeweb.libcode.com.au> and this reflects the number of times the students have accessed the internet. It is interesting to note that Google now has many less requests. (The whole table has not been presented here and there are many other sites between the top four and the Google site).

24 March, 2007

URL	Requests	Download in MB
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http://ninemsn.com.au/	332	2.71
http://scis.curriculum.edu.au/	379	0.23
http://officeimages.microsoft.com/	386	1.17
http://www.abc.com.au/	486	5.14
http://mtsamsonss.cmeweb.libcode.com.au/	494	0.67
http://block.eq.edu.au/	649	1.90
http://www.google.com.au/	689	4.36
http://www.foxtel.com.au/	4521	15.58

One month after the online availability of the online OPAC the OPAC now ranks at number 4, still behind the blocked sites of EQ. The two top most requested sites are now Google and Foxtel. As I do not have control over the activities in the computer lab I cannot be sure what the students were accessing these sites for. The access to the mtsamsonss.cmeweb is still at this stage largely recommended by the teacher-librarian. The computers in the lab also are not controlled with mandatory profiles and the students all have the same access logon. The students have access to the options setting of the internet browser and it was noticed that the mtsamsonss.cmeweb was now no longer set on all the lab computers.

The library online OPAC has seen some success, but it is evident from the data gathered before the MOE installation that much work is still to be done to break the 'Google habit'. This education process will involve the teachers as much as the students. The teachers need to be aware of the varying degrees of reliability that is available on the internet as well as raising their awareness of the valuable information that can be sourced from databases.

Next Steps

The changes which have been made in the provision of a library and information service at Mt Samson State School has created awareness by staff and the community that the library is more than a space dominated by the bookshelves. There is still much to be done to improve access and service for the patrons. The next initiatives include:

Provide a better online presence

The school webpage needs to be reworked so that it is easier to add information. Improve the onsite accessibility of the website by locating it on the school server so that the office staff can upload the newsletters and teaching staff can add notices and demonstrate the work their students have done. Purchase web development software and train staff in its use.

A space is needed on the school website for the library to publish the Library Mission Statement, information pathfinders and how to guides for the students to aid in their research.

Skill the staff and students

With improved computer lab facilities and the provision of laptops for teachers it will be necessary to skill the students and teachers in the use of online databases and in the better use of the online environment.

Develop information literacy skills

Demonstrate and encourage staff about the integration of information literacy.

Incorporate more information literacy skills into teacher planning by planning more closely with teachers, and encouraging teachers to share their planning and assessment rubrics.

Set up a shared document repository for staff which is accessible off campus.

Work with other teacher-librarians

Continue to raise the awareness with teacher-librarian colleagues of the importance of a library presence in the online environment.

Use Evidence – based practice

Gather evidence on a regular basis which demonstrates the value of the teacher-librarian in the teaching and learning of the school.

Provide school administration with regular reports from the evidence.

Conclusion

ITS - Investigation, Tenacity and Support

On reflection, the challenges of creating an online library presence were greater than I first anticipated. While it was necessary to meet technological requirements and to maintain a secure network environment for the students, getting technological information in a format that could be interpreted by the technicians was difficult. Whatever information was sent was never seen to be acceptable, and it was impossible to find out what requirements had to be met when they were never completely articulated from the corporate environment of EQ. The library service providers were not in communication with the computer system designers at EQ and all information had to be passed second hand. Without the skills to investigate and understand the data for myself this project would never have come to fruition.

The solution was in hindsight the best one for our school, and has seen many positive benefits including: –

- Cost of data transfer and ongoing maintenance;
- Ease of installation;
- Ease of upgrades;
- Incorporation of web sites in the library database which is maintained with SCIS Authority files;
- Reporting facilities which provide meaningful data for the future development of the library collection;
- Adding new resources is consistently catalogued;
- Backup and file transfer to the CMEWeb are one step processes;
- Daily management is easy with access to circulation data for each day's activities;
- The connection with the local school community has been positive;
- The library OPAC is available anywhere anytime.

Investigation to gather evidence, tenacity and the support of the school administration were the three key elements that worked to bring the library database online at Mt Samson State School. The provision of reliable information and evidence to all parties aided in the final decision making and acceptance that the CMEWeb option was a financially responsible and security conscious solution to the provision of an online library database. Difficult circumstances can be overcome with the partnership of tenacity to keep going and the support of the school administration. Mt Samson State School is building a library and information service that can meet the demands of the school and local community.

Afterward – the effect of the MOE

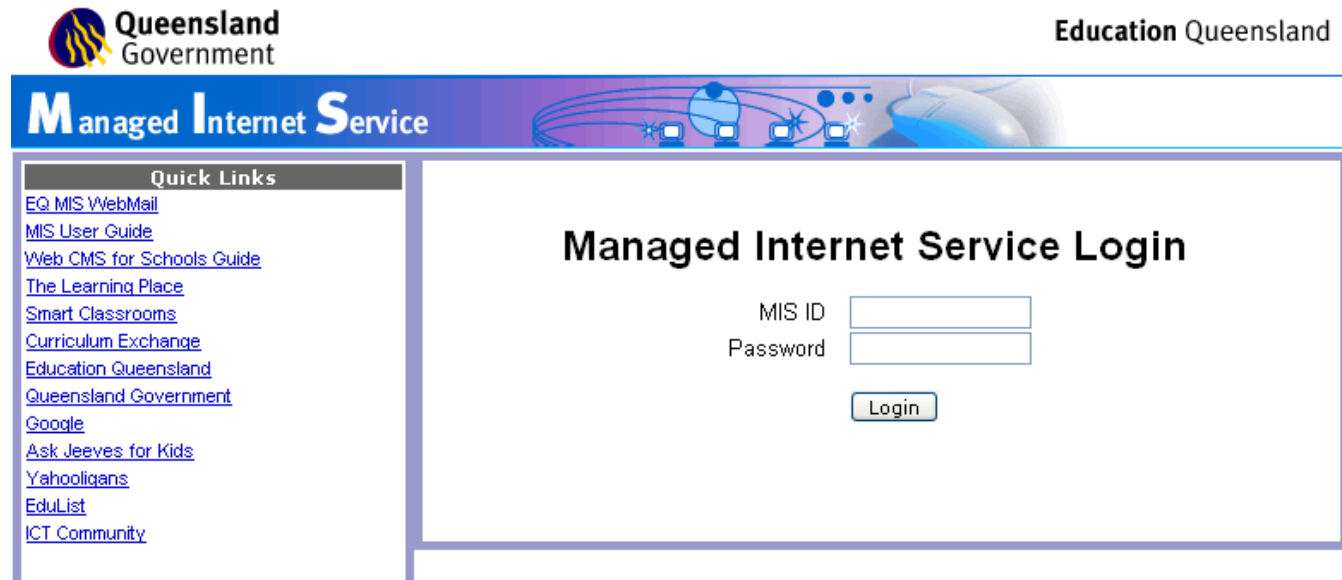
The case study evidence gathering and the culmination of the project was intended to be at the installation of the MOE. Events have occurred since, which are outside this project but are worth mentioning. The events are mentioned here to demonstrate the long way that school libraries have to go in an educational environment to become a valuable information source in their schools.

During the course of the MOE installations a team of computer technicians rebuilt each of the computer workstations and teacher laptops in our school. A new server with Microsoft Server 2003 was installed and the old administration server was rebuilt and used as a member server. The CD ROMs were cached onto the member server. The library database was housed on the main server and was included in the daily backup regime.

The students now had individual and unique network logons which comprised eight characters, which must include a capital letter, a number and a character. The access to the internet required a separate password which had to be six characters in length. The students each have a home directory, access to a common directory and access to their documents and settings. There is a set

directory structure and the user is unable to create additional folders, nor to rename the folders. There is more flexibility for the user in the documents and settings directories. The internet home page is the same for staff and students and is created as part of the user profile. It has been set as the EQ Edinfo page which provides a link to the EQ webmail.

Screenshot of the Internet Browser opening page



Queensland Government

Education Queensland

Managed Internet Service

Managed Internet Service Login

Quick Links

- [EQ MIS WebMail](#)
- [MIS User Guide](#)
- [Web CMS for Schools Guide](#)
- [The Learning Place](#)
- [Smart Classrooms](#)
- [Curriculum Exchange](#)
- [Education Queensland](#)
- [Queensland Government](#)
- [Google](#)
- [Ask Jeeves for Kids](#)
- [Yahooligans](#)
- [EduList](#)
- [ICT Community](#)

MIS ID

Password

Login

Quick links have been provided by EQ for the user. It is interesting to note that links have been made to three search engines, but to no databases. Most of the links go to EQ related sites and are of a corporate nature. They have little relevance to students. The following data of internet traffic is taken the week after the MOE was installed at Mt Samson State School. Again this is not a full listing, and comprises the six most requested sites. Google has slid further down the list and the mtsamsonss.cmeweb has had a dramatic decrease in traffic. Also having a dramatic decrease in requests is the amount of blocked sites.

27 April, 2007

URL	Requests	Download MB
http://cmeweb.libcode.com.au/	8	0.05
http://www.google.com.au/	61	0.37
http://www.traveltrain.com.au/	174	1.28
http://img.cricinfo.com/	178	0.06
https://webmail.eq.edu.au:443/	232	4.91
http://iwww2.qed.qld.gov.au/	326	3.60
http://www.edna.edu.au/	391	3.14
http://iwww.qed.qld.gov.au/	446	2.56

After the installation of the MOE our computer lab was fully operational. The students were making more use of the available CD ROMS this in part was due to the two logons required, and the students could not remember when to use each one. The students and the teachers were a bit confused. A second event happened at this time which is worth mentioning. Our school principal provides the teachers with the additional hour of non-contact time as part of his work agreement. He has a strong interest in the delivery of ICT and takes this time in the computer lab. He works with the teachers in much the same way that I do in the role of teacher-librarian to ensure the embedding of ICT skills into the teachers work units. So although the teachers are not part of the ICT lessons the skills the students are learning are part of the learning program. These days

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happened to coincide with the days that I work at the school; hence the availability of the computer lab for classes I was working with was severely restricted. There is now one computer in the library which the students can use, but there are no facilities for a data projector or an interactive whiteboard to provide broader instruction to a whole class group. The ability to work with the students in an online environment for the development of information literacy was now restricted.

26 May, 2007

URL	Requests	Download MB
http://mtsamsonss.cmeweb.libcode.com.au/	108	0.64
http://education.qld.gov.au/	443	7.17
http://eq4.janison.com/	472	3.82
http://www.abc.com.au/	485	4.62
http://www.google.com.au/	585	4.96
http://block.eq.edu.au/	820	2.76
http://iwww.qed.qld.gov.au/	875	6.34
http://tbn0.google.com/	961	3.39
https://mis.eq.edu.au:443/	1089	12.80
http://eq.janison.com.au/	3625	40.81

The May data collection indicates that the teachers are now making greater use of their laptops at school and are becoming more skilled and confident in collecting their emails. Most of them now have the mtsamsonss.cmeweb as a link in their favourites. The web traffic data now also indicates the activities of the teachers. The students have become more confident and the blocked sites have now regained their hold to be the fifth most requested. Google has made a dramatic increase in frequency and now holds number three position, due in part to the link provided on the internet browser opening page. The mtsamsonss.cmeweb link is making a steady return but obviously has a long way to go to become the tool of choice for the students.

The school principal is aware of the problem and supports that the library OPAC should be the first path the students take to find information. Despite our requests at the installation of the MOE and weekly requests since, it seems impossible to have the internet browser opening page changed to the mtsamsonss.cmeweb link. I have emailed people who I believe have the authority to change this, providing reasons for the use of the library OPAC as the first source that the students view, but no replies have been forthcoming.

One major successful outcome of the online library OPAC has been with the support of the parents. The school P&C has a small library of books which they managed themselves. These books were for parents of the school to borrow and the content mainly related to childhood illnesses and treatments, human relationships and child development. The P&C members have requested that the parent library resources be catalogued with the school collection and managed by the library staff. Parents can become borrowers on the library system. The P&C has also allocated some funds to upgrade this collection and have left the purchasing of new parent references to the teacher-librarian. During a recent school open day to celebrate Education Week the library was accessible for all visitors to the school. Some parents took the opportunity to visit the library and library staff showed them how to use the online library OPAC. While not overrun with parent visitors the responses have been warmly received. Parents can now search the school library database and associated weblinks with their children. This has been a very positive step to reach the local school community for this school library.

School libraries face a constant battle for recognition as a valuable information source in their school communities. With no overarching body or guidance at the corporate level of the education bureaucracy it is easy for school libraries to be overlooked. Individually as teacher-librarians we

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can work within our local communities, but at a state level within a corporate environment, library and information services are swimming against a tide of misinformation at best and ignorance at the worst.

Research Methodology

Introduction

The aim of this pilot research is to find out if there is any evidence to support the concept that the teacher-librarian has a positive impact on the literacy levels of students. The Year 3, 5 and 7 tests will be used as a benchmark of the literacy levels of students from each school. If above average levels of literacy can be established when the teacher-librarian is actively involved in the teaching and learning of the students it is important to find out what these teacher-librarians are doing to produce such achievements in the students. The pilot research will investigate-

- What are the effective strategies and work practices used by these teacher-librarians?
- What measures do they use to demonstrate their effectiveness?

The pilot study will also attempt to reveal the issues that may be hindering the effectiveness of the delivery of the library program and the provision of a school library service which meets the needs of the school community. These issues may consequently have an impact on the literacy levels of the students.

Method Selection

It may seem obvious to state that when conducting research it is necessary to select appropriate methods which will provide the types of data (or answers) to enable conclusions to be drawn about the problem. The researcher needs to ask 'What do I want to know?' and 'What method will guide me in that direction?' Quantitative researchers prefer the deductive method by forming a hypothesis from a theory, gathering data to test the hypothesis, revising or discarding the theory, looking for final saturation while controlling variables and holding influences constant. Qualitative approaches are commonly used to describe phenomena, to capture meaning instead of numbers and to describe processes rather than outcomes (Given 2006, p.378). 'Indeed (the) quantitative measures are important to measure services and products. On the other hand qualitative measures are needed to measure impact and partnership outcomes' (J. Henri, personal communication, 7 June, 2007).

Qualitative inquiry allows a researcher to examine a topic in great depth from the interviewee's perspective. The responses gathered from the interview questions provide perspectives on opinions, feelings, attitudes, descriptions of personal behaviours and other elements related to the research problem. Common themes and patterns begin to emerge as the interviews are conducted and saturation point typically occurs with a minimum of 15-18 participants (Given, 2006, p.383).

A semi-structured interview approach was utilised for this research. Using open-ended semi-structured questions allows respondents to provide insights into their feelings, opinions, and attitudes providing greater insights into the issues under investigation and allows the research to examine a topic in greater depth. The transcription of interviews can be cost prohibitive in a large sampling and the analysing of the information must be manageable. It is for these reasons that quantitative researchers often come under fire for using small sample sizes or methods that 'on the surface may appear to gather "anecdotal" or "biased" data – charges that imply sloppy design and research results that are of little value to practice' (Given 2006, p.379). There can also be a perception that qualitative research is inherently biased, but 'qualitative research acknowledges bias and embraces it as part of the investigation' (Given 2006, p.379). Booth and Brice (2004) note that it is not the method of investigation which should be of concern, but the quality of the evidence and the use of appropriate methods in obtaining that evidence.

The pilot study also focuses on drawing a correlation that where libraries are better staffed, better stocked, better funded – academic achievement of the students tends to be higher. In this case measuring performance against the literacy levels as indicated by the year 3, 5 & 7 tests. While the Year 3, 5, & 7 tests are one measurement strategy, the broader issues of measuring school library services for effectiveness, accountability and alignment to strategic goals will also be a focus of the interview questions. Todd (2001) reinforces this view in the statement-

‘The hallmark of a school library in the 21st century is not its collections, its systems, its technology, its staffing, its building BUT its actions and evidences that show that it makes a real difference to student learning, that it contributes in tangible and significant ways to the development of human understanding, meaning making and construction knowledge. The school library is about empowerment, connectivity, engagement, interactivity, and its outcome is knowledge construction’ (p.3).

The initial focus of this pilot study was to establish whether the teacher-librarian has a positive impact on the literacy standards of students using the Year 3, 5 & 7 tests as a benchmark to measure against. Due to the semi-structured nature of the interview questions, it should not be surprising that further issues emerged as the interviews were conducted. According to Silverman (1993) ‘a feature of many qualitative research studies is that there is no specific hypothesis at the outset but that hypotheses are produced (or induced) during the early stages of research’ (p.2). These emerging issues can only be noted but not addressed within the parameters of this pilot study.

The interview questions were designed to draw teacher-librarians’ perceptions on the following issues:-

- Misunderstandings and misconceptions of school administrators and staff of what a library and information service can provide as well as lack of support for the teacher-librarian to provide such a service.
- Diversifying and overloading the role to provide other school initiatives. The provision of a full time library and information service, even when staffing allocation is provided is a rarity.
- Adequate funding provision for resources, infrastructure and staffing.
- The strategies that teacher-librarians use to measure their effectiveness.

The interview questions of this pilot study aim to draw correlations, explore similarities between existing U.S. and Australian research on the impact the teacher-librarian has on student achievement and in particular, with this study, the impact on literacy levels on students within the pilot study area. To provide such evidence, qualitative research into the daily procedures, work practices and environment of the typical Queensland teacher-librarian was required.

The participants and background of the population sample

The participants of this research project were the author of this report and four teacher-librarians from a mix of government and non-government primary schools. The author of this report conducted the interviews and compiled the transcripts. The author has been a teacher for 30 years and a teacher-librarian for 18 of those years. All employment has been with Education Queensland (EQ). The challenges facing teacher-librarians is something the author has experienced and this knowledge assisted in the framing of the research investigation. The interviewees were approached to be part of this pilot research, and were known to the researcher in a professional capacity. All participants were enthusiastic to participate and the first four approaches were successful in gaining interviews. This sampling of teacher-librarians was from the Caboolture cluster of primary schools.

There was no requirement for this study that the participants be qualified in teacher-librarianship, only that they were in the role as teacher-librarian at their prospective schools. The participants had backgrounds with a range of experience from beginning teacher-librarians to those who had held the position for a considerable time. All of the participants are regularly involved in the Caboolture Primary Teacher-librarian Co-operative – a network group which has been active in the Caboolture area for about 20 years. In this pilot study, all of the participants have qualifications in teacher-librarianship and all are female. This is in part due to the fact that there are very few males involved in teacher-librarianship, especially in the primary sector, and that there is only one male teacher-librarian who is actively involved in the teacher-librarian network in the Caboolture cluster of schools. Education Queensland does not maintain a list of teacher-librarians which is accessible outside staffing branch and when the teacher-librarians are not actively involved in the network groups it is very difficult to find out who is in the role of teacher-librarian on each campus, unless they have a presence on the school website. The difficulty of access to teacher-librarians is further compounded when there is no library presence on the school website. Due to the restrictions in gaining access to teacher-librarians, the range of participants in this pilot study is quite narrow. A full study would draw from a wider range of schools, gender and experience and would work at gaining information and access to information through the educational bodies.

To limit variables, it was felt necessary for this pilot study that the participants be drawn from similar backgrounds. The schools involved are similar in socio-economic standing, with comparable student populations, facilities and support staffing allocations. To gain a more overall picture and to establish that the issues were not particular to one educational sector, schools were selected from both the government and independent education sector.

Table 1: Overview of interviewee background information

Identifier	Education Sector	School Population	Qualified in teacher-librarianship	Work allocation
School A	EQ	540	Yes	Full time allocation with network administration and IT first point of call. (Interviewee now retired).
School B	EQ	535	Yes	Full time with Network administration
School C	Catholic	610	Yes	Full time as teacher-librarian
School D	Lutheran	384. This school is in a period of growth and will go to 500 + students in 2008.	Yes. Shared role with both teacher-librarians having qualifications	0.2 as teacher-librarian, 0.2 as Curriculum co-ordinator. 0.2 provided by part time partner

The Pilot Study

Background to the interview questions

The interview questions were framed drawing on the background readings of Lonsdale (2003), Lance (2001), Henri, Hay & Oberg (2002) and Todd (2001). The relationship of these readings to the research findings will be fully outlined in the Discussion Chapter. The intention here is to provide information only as to the sources of information from which the interview questions were drawn. (Refer to Appendix E for Interview Questions).

Lance (2001) with a group of researchers affiliated with the Colorado State Library and the University of Denver completed four statewide studies on the impact of school library media programs on the academic achievement of U.S. public school students. Previous studies had identified three roles for the Library media specialist as-

- The learning and teaching role
- The information access and delivery role and
- The program administration role

The major finding of the Lance (2001) study was that 'where library media programs were better staffed, better stocked and better funded, academic achievement tend(ed) to be higher' (p.3).

To bring Lance's research into an Australian context it was necessary to establish teacher-librarians perceptions about their role and hence the interviewees were asked - What do you think is the real purpose of your role?

The common findings of the Lance (2001) report assisted in the formation of many of the questions for the interviews. Lance's common findings of the impact of school library media programs on academic achievement included:

- Professionally trained and credentialed school library media specialists do make a difference that affects student performance on achievement tests.
- For library media specialists to make this difference, the support of principals and teachers is essential.
- Library media specialists cannot perform their jobs effectively unless they have support staff who free them from routine tasks and enable them to participate in a variety of one-to-one and group meetings outside the library media center.
- Library media specialists have a twofold teaching role. They are teachers of students, facilitating the development of information-literacy skills necessary for success in all content areas, and they are in-service trainers of teachers, keeping abreast of the latest information resources and technology.
- Library media specialists also must embrace technology to be effective. They must ensure that school networks extend the availability of information resources beyond the walls of the library media center, throughout the building, and, in the best cases, into students' homes. (p.3)

Background for an Australian context for this research was provided by Lonsdale (2003). Lonsdale suggests that there is a need for further investigation using qualitative methodologies into how school libraries measure their effectiveness. Todd (2001) is not convinced that 'action and evidence-based, learning centred practice focusing on engagement with information for human understanding and knowledge construction, are key mindsets for the profession' (p.3). Todd argues that the central public concerns of teacher-librarians 'continue to be expressed in terms of collections, position and advocacy' reinforcing his belief 'that this is the major limiting factor of the profession today' (p3.)

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A reliance on reading scores and state test results may yield valuable insights but they are limited by their reliance on statistical analysis (Lonsdale 2003, p.26). Henri, Hay & Oberg (2002) provide some structure for a qualitative measurement strategy and it was used by respondents in this research. (Appendix F). The questions for this pilot research have drawn on the research of Lance (2001) who provides the U.S research findings and of Lonsdale (2003) and Todd (2001) who provide an Australian context. The interview questions have been designed to draw a correlation between these findings and the current situation with the teacher-librarians in this pilot study.

The Interview process

As this is a pilot study the interview questions themselves will be assessed as an effective measure of gaining information about the work practices of teacher-librarians in an effort to understand their contributions to student literacy, and more broadly how teacher-librarians measure and report on their effectiveness. The aim of the interview questions was to find answers of sufficient scope and depth to enable a satisfactory conclusion to be made. This project takes an applied research approach and is concerned with solving specific problems in real life situations. The pragmatic nature of this research uses information which is immediately available in an effort to solve actual problems (Williamson, Burstein & McKemmish 2000).

In all, four interviews were conducted. Three of these took place at the workplace of the interviewees. One interview was conducted in a neutral meeting place, but the workplace and its structure was well known to the researcher. The onsite interviews assisted in placing a context to the answers provided, allowed the interviewee to point and demonstrate if they felt the need, and they felt comfortable in their work environment. The interviewer/researcher used a semi-structured interview approach. Each interviewee was asked the same set of questions, but it also allowed the interviewer to follow up on leads provided by the participants, within a pre-defined and standardised framework (Williamson 2000). This enabled the interviewer/researcher to capture the individual respondents' perspectives about their role and challenges, but would also enable direct comparisons between individual responses. The semi-structured approach also enabled the interviewer/researcher to probe for more information if necessary to fully answer the questions and allowed the further questioning or clarification of unexpected information (Williamson 2000). By conducting face to face semi-structured interviews a response rate of 100% was able to be achieved for all questions.

The interviews were conducted in face to face interviews with the interview questions and responses recorded on audio tape. A transcript was made of the interview and emailed to the respondent to allow them to make any points of clarification that was seen to be necessary. Once the respondent was satisfied the transcript was returned and the audio tape was wiped. It was important that respondents and school locations would remain anonymous, so all names and references to particular schools was eliminated from the transcripts. Some of the interview transcripts were quite long as some respondents took time to think aloud in their answers. To this extent the interviews took on a narrative perspective allowing the interviewee to tell their story 'how it really is' revealing and recounting real instances to support their answers to the questions (Flick 1998, p.102). This allowed for the exploration of issues and was encouraged by the interviewer by making eye contact and encouraging body language to establish a high level of rapport.

The results of this research have a high level of reliability. The interviews were conducted on an interviewer-to-interviewee basis with all responses recorded in the same manner. This assures that the statements made are from those who are recorded in Table 1 and that the responses are a true reflection of each interviewee's opinions.

The data was analysed using descriptive techniques i.e. tables and direct quotations to draw out the recurrent themes outlined by the interviewees. Given that the data was exploratory and qualitative

is was not valid to analyse the responses using statistical techniques. Although this was a small sampling (Table 1) many similarities were evident in the transcripts of the respondents.

Issues and problems

The limiting factor with this type of research is the availability of interviewees as it takes time out of their working day to answer the questions. Transcription of the interviews is time consuming, and gathers information which may not be within the parameters of the research topic. Although not the case in these interviews, there is the possibility that in viewing their transcripts the interviewees may edit the information to put a better perspective on the situation they first described.

A second limiting factor is the difficulty of finding out who has the position of the teacher-librarian on each campus. To gain access to this information requires the co-operation of each educational body and further the co-operation of each school campus. Gaining access to a broader range of people maintaining the teacher-librarian position would provide information on the greater diversity of the role performed on each campus and perhaps provide some reasoning for the re-defining of the role which appears to be occurring.

A third limiting factor is that it is possible that there are issues that the interviewees did not wish to share with the interviewer and verifying the claims of each interviewee was not within the scope of this study.

Statutory Requirements

In 1999 all Commonwealth, State and Territory Education Ministers in Australia agreed to a National Literacy and Numeracy Plan which ensures that all students attain at least the literacy and numeracy skills essential for progress in their schooling. Bench mark standards were established and every child in Australia must participate in the testing. For the first time in 2000, education authorities reported on nationally comparable data measured against national literacy benchmarks (MCETTYA 2000, p.1).

In 2007 it became a requirement for all schools in Queensland to publish their Annual Report on their school website. Items for inclusion in the Annual Report are mandated and the inclusion of interest here is the report on Key Student Outcomes. All primary schools must report their outcomes in relation to the Years 3, 5 & 7 test results (Department of Education, Training and the Arts 2005). For those interviewed the data in relation to the Key Student Outcomes in Literacy provided on their respective school websites was used in this pilot study.

Ethical Clearance

To ensure that this research was conducted in an ethical manner application was made and clearance to proceed was given by the Ethics Committee of the Queensland University of Technology (QUT). Two separate clearances were given to conduct research covering the two stages of this project – that of the case study and the interviews. The ethics clearance number for the case study is 0600000822, and for the interviews is 0700000256. The broad overview covering the ethicacy of this project approval ensures that –

‘All ethical implications of the proposed research have been considered and all relevant local, state and national guidelines, regulations and legislation have been considered and the measures taken are appropriate and in accordance with University policy and the National Statement on Ethical Conduct in Research involving humans’ (Queensland University of Technology 2007, p.2).

All participants were made aware of these approvals at the outset as their safeguard that the information obtained from them in the course of the interviews would be handled ethically and that their responses would remain anonymous.

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Interview Design Conclusions

The qualitative nature of this pilot research allowed an in depth investigation of the issues from the interviewee's perspective. Though the sampling of participants was small, the open ended semi-structured interview questions revealed many similarities and recurrent themes and issues, that have the potential to frame further investigation into the topic.

The findings of the pilot research will be outlined fully in the Discussion chapter, but in summary the pilot study questions revealed that similar concerns were raised by teacher-librarians in relation to devaluation of the role, time to complete the many tasks which have become part of the role, cuts in funding and staffing and the ability of teacher-librarians to provide the services and collections that a well-equipped and staffed school library should provide to increase the literacy level of the students.

Findings from the Pilot Study Investigations

Introduction

Restating from the Research Methodology chapter, the aim of this pilot research is to find evidence to support the concept that the teacher-librarian has a positive impact on the literacy levels of students. Comparisons and some possible conclusions have been drawn from the evidence provided in the interviews with the respondents of the four schools involved in the pilot study, their responses to the Rubric for Appraising an Information Literate School Community (The Rubric), (Henri, Hay and Oberg, 2002) and the results of the Year 3, 5 and 7 Reading test results available on each of the schools' websites. Although the evidence gathered in this pilot study provides some support for the existing research of Hartzell (1997a), Hay (2000), Lonsdale (2003) and Todd (2001) it is not conclusive. The findings, however point to areas of possible further research that could be explored.

Some Common Findings from the Pilot Research

One school is demonstrating consistent above average levels on the National Reading tests, and findings from the interviews and The Rubric may provide some explanations as to why this school is successful. School D has strategies in place for the successful operation of a library and information service which meets the needs of its school community. Also, it compares well against the benchmark figures supplied by Australian School Library Association, & Australian Library and Information Association (2001), *Learning for the Future*. References to benchmark recommendations and figures all come from *Learning for the Future*.

The other three schools in this pilot study also demonstrated many strengths in the strategies that the teacher-librarians employed for a successful library and information service. Many similarities of good practice were outlined by all of the teacher-librarians in the study, including –

- A strong conviction from each teacher-librarian that they had a positive impact on the literacy levels of students;
- The work they did with the classes in a teaching role always took a priority;
- The provision of information and resource delivery for teachers was a high priority;
- Making the library accessible by providing opening times outside of school hours and making the library an inviting space was also important.

Similar issues were mentioned by the teacher-librarians which they perceived hampered the successful operation of the school library. Only the issues common to all respondents are summarised here-

- Time to get everything done was seen as the greatest barrier to the efficient management of the library.
- Adequate allocation of support staffing
- A budget which adequately meets the needs of the school curriculum
-

Issues of individual schools and some commonalities are drawn further in this Findings section.

The Findings in Detail

The Results of the Year 3, 5 and 7 National Tests

The information presented and discussed here is in relation to the statistical information of the Reading scores of 2006 from the Year 3, 5 and 7 national testing. Presented here are the percentages of students in each school and year level who are performing above the national

average. An analysis and reasoning taking into the factors of the interviews and the different situations in each school will be discussed further in this paper.

Table 2: Percentage of students performing above the national average in reading

	School A	School B	School C	School D
Reading Yr 3	97	89	96	98
Reading Yr 5	72	49	88	94
Reading Yr 7	87	75	97	93

The statistics reveal that with the exception of one year level in one school, all schools have a majority of students performing above the national average.

The two private sector schools (C&D) performed better overall than the two government sector (A&B) schools.

School D shows the best overall results.

School B demonstrates the lowest overall results.

Year 5 showed the lowest percentage of students performing above the national average in three of the schools. The two private sector schools performed well above the two government schools in the year 5 reading.

Year 3 shows the most consistently above average scores.

School A and B demonstrate that the situation could be improving with the results of Year 3 being the highest of their scores.

School D shows most potential in the future to maintain higher than average test results.

The background overview of the schools has been restated here for ease of comparison.

Table 1: Overview of school background information

Identifier	Education Sector	School Population	Qualified in teacher-librarianship	Work allocation
School A	EQ	540	Yes	Full time allocation with network administration and IT first point of call. (Interviewee now retired).
School B	EQ	535	Yes	Full time with Network administration
School C	Catholic	610	Yes	Full time as teacher-librarian
School D	Lutheran	384. This school is in a period of growth and will go to 500 + students in 2008.	Yes. Shared role with both teacher-librarians having qualifications	0.2 as teacher-librarian, 0.2 as Curriculum co-ordinator. 0.2 provided by part time partner

Making Comparisons against Learning for the Future

The benchmark figures used for comparison come from Australian School Library Association, & Australian Library and Information Association (2001). This document, *Learning for the Future*, is

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considered a benchmark document for the management and provisioning of school libraries in Australia. It makes recommendations or establishes benchmarks for the minimum information services centre staffing and equipping. The State Library of Queensland (2007) and the Queensland Department of Education, Training and the Arts (2007) both refer to and adopt the benchmarks of *Learning for the Future* as an authoritative source. The Benchmark figures in these tables refer to *Learning for the Future*.

OPAC Access

Students need to access the library database in order to find available resources in the library, place holds on items, to self-manage their loans and check the items they have on loan or overdue. This study only looked at student access to the OPAC when in the library, but ideally access to this information should be available anywhere on campus.

Table 3: OPAC terminals in each library compared with *Learning for the Future* (2001) benchmarks

	School A	School B	School C	School D
Bench mark	4	4	5	4
Number of OPAC terminals	4	4	3	4

Schools A, B and D have been able to meet the recommended minimum number of OPAC terminals. The location of the library in School C is beside and links to a computer lab. This school library also has access to a wireless network which can be used with transportable laptops. The teacher-librarian uses these two alternatives when required for large group instruction and information searching. While not located in the library the OPAC is available on these computers. While School D has OPACs available to the students it does not have internet access in the library for the students. Access to the library OPACs is not available elsewhere on the school campus. This school is in the process of addressing the situation and as submissions to government are successful, internet for student use will be provided in the library.

School A and B have OPAC and internet available for the students in the library and meet the minimum benchmark standards.

Teacher-librarian Staffing Allocations

Schools have a staffing allocation for all teaching, support teaching and non-teaching positions which is incrementally increased in relation to student population or equivalent full time teaching staff. In Education Queensland (EQ) schools the allocation of a full time teacher-librarian occurs at a student population of 350. Once a full time teacher-librarian has been appointed the increase in teacher-librarian allocation ceases, except for some instances in the very large secondary schools where sometimes two teacher-librarians will be on staff. This is a difficult comparison to make though, as in many secondary schools the teacher-librarian also has a subject load outside of the library duties. These staffing occurrences are slightly different to the recommendations made in *Learning for the Future* (2001) where a full time teacher-librarian is appointed at 17 staff or 318 students and continues to incrementally increase to adequately provide an information service for the student populations of very large schools. *Learning for the Future* (2001) also makes recommendations on the amount of support staff or aide time that should be allocated per week to assist in the management of the library. While it is also recommended that the support staff have qualifications as library technicians, this is rarely the case in schools. This is not to say that the library aides are unskilled or cannot perform their duties; it is just that there is no standard measure or particular requirements for the support staff in school libraries. Table 4 and Table 5 summarise the staffing situation in each of the schools in this study.

Table 4: Teacher-librarian staffing allocations

	School A	School B	School C	School D
Teaching staff including admin	24	24	27	16
Teacher librarian allocation	1.0	1.0	1.0	0.4 + 0.2 as Curriculum Coordinator
Benchmark for teacher-librarian allocation	1.0	1.0	1.2	0.6

This table seems to demonstrate equity of staffing provision for the teacher-librarian across the four schools, with each of the schools being at or close to the recommended staffing allocations. These recommendations are for the role of the teacher-librarian and do not assume that the teacher-librarian has been required to fulfil other school staffing shortfalls. Teacher-librarians can at times be asked to take classes for periods of time when other teaching staff are absent and they sometimes make up the non-contact time (NCT) if the school has been unable to provide the required time for the class teachers. There are many other instances where the teacher-librarian will be asked to fill in at short notice and the frequency of these occurrences will vary from school to school. Each of the teacher-librarians in this study performs other roles in the school outside that of the teacher-librarian. The schools with the largest amount of time taken to perform other duties were Schools A and B. The extra duties of these two teacher-librarians will be outlined separately. The teacher-librarian from School C often relieves and steps in as a school administrator. If this relief period is lengthy, additional teaching and support staff is brought into the library so that the library program can be maintained. The teacher-librarian from School D has 2 days of the teacher-librarian allocation devoted to the role of Curriculum Coordinator. This is a relatively new position in primary schools and is sometimes termed Head of Curriculum (HOC). In some ways the Curriculum Coordinator role is complementary to that of the teacher-librarian in that it is largely involved in planning and resourcing the teaching units of the teachers. The Curriculum Coordinator ensures that the planning of the teachers follows curriculum outcome statements and that there is a coordinated and sequential approach to the skill development of the students in all curriculum areas across all year levels. In some schools the teacher-librarian takes this role as part of co-operative planning and teaching, but perhaps not in the same detail that a full time Curriculum coordinator can provide, while in other schools the teacher-librarian assists the Curriculum Coordinator and is part of the planning process. In the case of School D it has had a beneficial effect in that the skills of information literacy and ICT have become embedded into the teaching and assessment strategies of the teachers. As the school student population grows this added role may be unsustainable when the numbers require the services of a full time teacher-librarian.

Support Staffing Allocations

To provide the additional services that a school library provides in a timely and efficient manner, well skilled support staff is required. School D is closest to the recommended benchmarks and the library aide at this school has additional qualifications as a library technician.

Table 5: Support time allocation

	School A	School B	School C	School D
Aide Hours Allocated	20	30	25 +	28
Recommended benchmark aide hours	38	38	38	29
Deficit on aide hours	18	8	13	1

Schools A falls well below the support staffing recommendations. Schools B and C are also below the recommendations, but School C is able to call upon extra support time when necessary or as the teacher-librarian feels that the management of the library is falling behind. The library aides in School A, B and C have held the positions for long periods of time. At School A the library aide has been in the library for 30 years and assisted in the initial automation and subsequent training of relief aides. The situation is similar in School B and C. Should these aides leave the school a huge loss of skills will go with them. No provision has been made at any of the schools for the skilling of additional staff or the replacement of these aides when the time arises.

The socio-economic status of the schools was not part of the criteria in the selection of the schools for this pilot study, but it should be mentioned here, that although these schools are in the same geographic location, School B probably draws from the lowest socio-economic clientele. Research indicates that low socio-economic conditions are not a barrier to literacy **IF** all other things are equal (Lance 2001, Hartzell, 2003). Schools have limited budgets, and sometimes their funding and staffing allocations need to be used to address social issues. To meet this extended budget, core programs may be reduced in funding and it could be that at School B this has been the case. While some attention has been drawn to this issue, investigating the socio-economic status of each locality is beyond the scope of this pilot study.

Supporting and Managing the School wide Network

Schools C and D provide additional staff for the management and support of the school wide network as well as teachers to implement the ICT program. These activities do not involve the teacher-librarian other than in a planning role with the ICT teachers. The technology infrastructure needs for the management of the library system are made known at a management level. While the teacher-librarian has input in these two areas they are not part of their day to day role, hence School C and D staffing allocations for network support have not been included in the following findings.

Both School A and B teacher-librarians have the added responsibility of managing the school wide network. Their duties go beyond the role of a network administrator. They are called upon as the first point-of-call to troubleshoot all manner of IT hardware and software related problems from the staff and students. It is equivalent to manning full-time at-call IT support. Their duties also involve tracking the location and condition of each computer workstation, managing software installation, licencing compliance, user details and logons, printer use and the yearly audit, a requirement for EQ schools as part of their reporting process. These two schools are operating their networks under the first version of the Standard Operating System for schools where there are two separate networks – one for curriculum and one for administration. Support for the administration network is provided by district technicians employed by EQ and if they have time available they can provide assistance for the management of the curriculum network. EQ schools do not have as part of their staffing allocation a person to manage the school network and so for reliable and regular support schools choose to purchase from their funding allocation the support of school based computer technicians. As these employees are not EQ employees they cannot take full responsibility for the management of the school network, and this role is left to a staff member of

the school. The person allocated this responsibility varies from school to school, but in many cases in EQ schools it is the role of the teacher-librarian. *Learning for the Future* (2001) recommends the following staffing allocations for school network support-

Table 6: Network support recommended minimum technical staffing

Number of Desktops/Notebooks	Network Manager (full time equivalent)	Technical support (full time equivalent)
Benchmark for 50	0.5 (2.5 days per week)	0.1 (1 day per week)
Benchmark for 100	0.8 (4 days per week)	0.2 (2 days per week)

Table 7 indicates that Schools A and B are well resourced with IT infrastructure and hardware with all computers being networked and having internet access. Each school's provision of IT infrastructure and hardware is not within the scope of this study, but the hours of support that the teacher-librarian provides is the point of discussion here.

Table 7: Number of PCs/Laptops and network support provision

	School A	School B
Number of PCs/Laptops	85	121
Hours of network support purchased from school funding	3 hours (1/2 day per week)	6 hours (1 day per week)

The hours of network support indicated here are those that School A and B have purchased from school funding allocation. The comparison of the two tables shows an obvious shortfall from the recommended minimum and what is actually provided.

Table 8: Shortfall of hours in IT support

	School A	School B
Shortfall of time made up by the teacher-librarian (Network administration and Technical support)	4 1/2 days per week	5 days per week

The shortfall in time allocation for each school was calculated by amalgamating the Network Manager and Technical support time and then subtracting the time the school was providing support for. The Network Manager and Technical support time were amalgamated for the calculation of shortfall hours as the teacher-librarian provides support for both of these aspects of the school wide network management. It is clearly obvious that the teacher-librarians at School A and B are performing two full time or near full time roles – that of teacher-librarian and school wide network manager.

Appraising an Information Literate School Community

At the end of each interview, each of the respondents was left with the Rubric for Appraising and Information Literate School Community (Henri, Hay, Oberg, 2002). This will be referred to as The Rubric. The respondents were left with The Rubric to complete and return in their own time. All Rubrics are included in the Appendices. As the respondents were given The Rubric it was explained that this could be used as a tool to measure their own effectiveness and to identify gaps in the direction of the library and information services program. It could be a useful strategy to share with their school principal to help to establish a future direction for the library. The Rubric as a measurement tool has many positive aspects.

In viewing The Rubrics, School D has a majority of indicators in the Proficient and Advanced sectors. School C has identified some areas that are in the Emerging and Developing stages, but

many of the indicators are at the Proficient level. School B shows the greatest variance in levels of proficiency, with some levels at the Developing, some at Proficient and some at Advanced levels. School A has attempted to indicate the proficiency when she was still at the school and the levels since she has retired. The levels when she was at the school are the levels taken into consideration for this research as these best describe the situation when the Year 3, 5, and 7 tests were conducted. School A demonstrates that the proficiency levels are mainly at the Developing and Proficient range.

In order to make some comparisons between The Rubrics of the schools in the study a quantitative measure was allocated to each of the evaluation criteria. Emerging was allocated 1 point, Developing -2 points, Proficient -3 points and Advanced – 4 points. Of the 7 criteria for evaluation a total of 28 points could be achieved. (See Appendices A.2, B.2, C.2, D.2). The totals for each school were :

- School A - 20 points,
- School B - 21.5 points
- School C - 20 points
- School D - 24 points

In applying this measurement strategy, School D recorded the highest number of points, and has the potential to improve this rating when funding for ICT development is in place. The results are in a range of 20 to 24 points with a possible total of 28 points. The scores for Schools A, B and C range from 20 to 21.5 points and are very close. Although School D again ranks in the forefront, this measurement strategy may not assist in making conclusive comparisons between the schools. In the allocation of points in this instance, each indicator was given the same ranking of importance in appraising the information literate school. Perhaps there is a difference in the importance of each of the indicators and the indicator 'Information skills are taught and learned in context across the curriculum' for instance, could have a greater weighting than the indicator 'The existence of an information policy'. This strategy for measurement is beyond the scope of this pilot study, but is something that has the potential for future investigation.

Summary of Interviewee Responses

The full transcript of each interviewee is provided in the Appendices. Schools A and B provided quite lengthy interviews needed to explain the diverse nature of their roles. Supplied here is a summary of all interviews.

Summary of School A

The teacher-librarian from School A has very recently retired after a long career as a teacher-librarian in both the secondary and primary sectors. For many years she has worked in a job share part time capacity most recently sharing the role with a teaching partner who is not trained as a teacher-librarian, but who has worked in school libraries for a few years. Her main role was in teaching and her grasp of the concepts of information literacy and the promotion of literacy were excellence. She played a minor role in the library management. The replacement teacher at School A is a teacher with skills in ICT delivery; she displays no particular interest in libraries, information literacy, the provision of information services and does not have any skills in network management. While this information is outside the scope of this pilot study, it has caused concern for the School A respondent and the remaining teacher who works in the library.

The teacher-librarian from School A saw the most important aspect of the role was to promote literacy; to get the children reading by exposing them to good literature and making the library an inviting and accessible place for the students. The promotion and the joy of reading was a high priority. It was important for the students to get into a regular habit of borrowing and reading and the promotion of the local council libraries also plays a part in this. The school is in walking distance of the council library

and each year the council library promotes and encourages the students to become library members. The students are regularly involved in activities at the council library. Secondly, but of no lesser importance was the integration of information literacy skills utilizing a well planned program to develop the information literacy skills of the students from year 1 to year 7. To embed the information literacy into the work programs is the best way to achieve development of skills across all year levels. The students have to learn to be good researchers.

School A respondent also sees the role is to provide a service, especially for the teachers to ensure that they have the resources they need. 'Providing a backup service is important because a lot of teachers do not have a clue how to use a library or they don't think they have the time to do it, so they really need that service.' School A respondent considered that one of the most valuable assets of the teacher-librarian was that due to their knowledge of the collection they could find the right resources efficiently.

School A respondent provided professional development workshops for teachers that largely covered ICT development. She became a master trainer for the Intel Teach to the Future course and ran a series of workshops after school and on weekends for the staff to build their skills in general and to embed ICT into their teaching. She noticed how much more independent and confident the teachers were after completing the workshops. The workshops gave the teacher-librarian a higher profile in the school.

Time constraints restricted this teacher-librarian's involvement in other aspects of the school. In previous year she had been the Editor in Chief of the school newspaper. This was an extra-curricular activity for the students in the lunch breaks and produced a newspaper each term.. In the past year she found she had to curtail this activity. She became involved in the compilation of a CD for the Year 7s as a culminating activity of their primary school years. It was a digital format year book. Although time constraints restricted the extra-curricular involvement this teacher-librarian did like the flexibility that the role provided to become involved in a more active way with the students.

The biggest challenge that this teacher-librarian finds at the present is time to do all the background tasks that need to be accomplished. Aide time has been reduced and she feels she is 'just fighting fires'. The management tasks of culling, stocktaking to keep the collection relevant have not been undertaken in a few years. She identifies the support from the school administration as important in maintaining a well-run library. There is no reliability in the provision of services as the library aide is often called upon to perform other tasks at short notice. The teacher-librarian feels she cannot offer a good library service and that ultimately the students suffer. She identifies that many of the tasks she undertakes could easily be handled with additional aide time. The tasks of making sure computer lab printers have adequate paper, the general maintenance tasks of the computers, getting overdue notices to the students should be handled with teacher aide time and these tasks take her away from her own core business.

The School A respondent felt she had a need to be more greatly involved with the local school community, but again time constraints did not allow this. In the past Book Week had been a major library focus, but now the students visit the local council library during Book Week. She no longer has time to run Book Fairs in the library as she does not have the staff to assist her in running such an event. She does manage to get Book Club notices out and have the orders collated, but does not do this as regularly as she thinks she should. Again the restriction is in having the staff to compile and sort the orders. This is quite a good fund raiser for the library and has the potential to provide resources for the library collection, but this teacher-librarian feels it is an opportunity that is missed here. She believes that because the library is less accessible to the parents that the library has suffered in regard to Parents and Citizens Association funding (P&C).

The technology infrastructure and hardware was described as 'state of the art'. The server was new and was running an EQ version of the SOE. The library management and circulation computers were the latest available and helped in streamlining processing of resources and student borrowing. There are 4 OPAC computers with internet access for the students to use. After seven years since the first plans were drawn up the library is finally having an extension built. This will include a small computer lab and enable the library space to be more flexibly used. The teacher-librarian has quite a lot of teaching involvement in the computer lab. There are 30 computers in the lab and a pod of computers - usually 4

in each classroom. Every year the school purchases 15-20 computers and so the school has very few old computers. She considers that the school is well set up in regard to student access to computers and the internet. The school administration has more recently been placing a drain on the IT budget, as there is no distinction in the budget between the students' computer needs and the needs of the school administration. The administrative needs have risen from 5 or 6 computers to 12 computers and with the addition of a new server for the administration; this has eaten into the IT budget considerably. She explains that the bureaucratic nature of EQ administration with all information to schools being done online – from learning support, reading recovery and special needs - support teachers all requiring online access while there is not extra provision in school administration budgets to cover this. 'This impacts on the kids again...as usual. There's nothing new here'.

In regard to the teaching of information literacy School A respondent felt that an integrated approach was more effective, but left with limited time to work with teachers to organise planning sessions she felt that to provide lessons regularly that may be more process oriented was better than providing nothing. She felt that the lessons she provided were also more of a process nature because the teaching staff were a bit behind on integrating information skills into their integrated units. She felt this in part could be resolved with teachers having greater access to her for planning....and with the recent changes in teaching direction with integrated units no longer being favoured it has left the planning with a bit of questions mark. 'At the moment the school has no library program, no teaching program, and the IT is....well not much'.

In observing the skills and strategies the students display School A respondent felt that the students lacked advanced skills. 'So I think the more you can show them, and can incorporate into your program, the better off they are going to be.'

The students borrow regularly from the school library and there is a high level of borrowing for recreational reading. She encourages the children to visit the library as often as they wish to borrow. The teacher-librarian feels that she has a positive impact on the literacy of the students.

In evaluating the services of the library School A respondent mainly uses information of an anecdotal nature. Again time was a constraint in gathering meaningful data. She does not have the opportunity in the school day to reflect upon what she has done, to think through what worked and what did not. She feels that at staff meetings there are negative vibes from staff when extra items are added to the agenda, so this is not a good avenue to give and receive information. This teacher-librarian did take notice of any feedback that she did receive, usually of a verbal nature from staff. In many instances this feedback was by way of passing comments and staff usually let her know when she had done things that they had really liked. She also took note of any negative comments or feedback and reacted by sorting out the problem quickly. She felt she could take more statistics of the activities in the library but again time was the issue here. She tended to rely more on having a sense of whether the staff were happy with the services or not.

School A respondent also noted that very rarely is she asked to produce data about the library activities. Some teachers will request the borrowing history of a student. It was remarked that the new school principal had never come into the library. She considered that the school principal should be more actively involved and asking how the library supports the students at the school and this would provide the teacher-librarian with the opportunity to show the information literacy program and say 'Look this is what we are doing, see all these wonderful things'.

School A respondent had involvement in the IT committee, but with the arrival of the new principal committee structures were thrown into a bit of upheaval. Committee meetings seemed to lapse and the school lost direction for a while. The teacher-librarian felt she was professionally empowered when she could have a say in the management of the school. She liked to have the opportunity to offer suggestions and to have real communication with the school principal. She felt that she was very experienced and knowledgeable in the field of teacher-librarianship and now she was being dictated to and told that her role was not effective. She considered that the principal demonstrated little or no understanding of the teacher-librarian's role and had become controlling rather than supportive.

In regard to collection development the focus was to resource the integrated units of the teachers and to provide quality fiction for the students. The teacher-librarian felt the teachers were receptive of the new fiction if she had read the book and could suggest ways to use it in the classroom. Some teachers do make suggestions for the resources they would like and the teacher-librarian purchased what she could to support their needs. The library budget had seen some serious cut backs in the last couple of years so resourcing the needs of the school had become very difficult.

Aide time has been reduced by 10 hours this year despite promises from administration that aide time would be available to the library on a full time basis this year. The library has had to rely on the help of volunteers. This had actually further drained the available time of the library staff as the volunteers needed to be trained and it seems their real purpose for volunteering in the library is to gain skills to enable them to apply for teacher aide positions in the school. The library staff are training the future aides and relief aides for the school. The library aide has been at the school for 30 years and is very competent and knows the collection well. Extra resources were purchased this year to provision the new Prep years, but no additional aide time was allocated to process these.

School A respondent although recently retired remarked that 'after a career of all these years, it is the best area to be in....I love it.I am just sad that the system is just not supporting libraries because we have so much to offer than they are letting us do, and I think a good school has a good library. I think the kids are better off with a good strong library program'.

Summary of School B

School B respondent has been a teacher-librarian for 12 years and previous to that was a class teacher. She is expecting to retire at the end of this year. There is a state of flux in regard to who will replace her and she is lobbying hard to ensure that the replacement is a trained teacher-librarian who will maintain an information and literacy focus. The school principal is suggesting that the position should go to a person who will manage the school wide network and have an emphasis on the development on ICT skills.

School B respondent sees her role as encompassing learning and teaching, providing access to information and delivery as well as the management of the libraries resources. She sees she has a really important teaching/learning role. She felt if she did not really value the teaching role she had the opportunity to discontinue it about 5 years ago as she took on more management responsibilities in the school. She is the ICT co-ordinator, MIS administrator and provides assistance with the school wide network. This year she has taken less of a role with the ICT and has worked to train another teacher to take this on. She still spends a lot of time in the organisational and management aspects of the school wide network because she has the experience and knows the history of the setup. She does less of the everyday fix-it problems though. The school also has a new technician who is not familiar with EQ setup and she is very much involved with teaching him, rather than have teachers ambush him and divert him to fix minor problems. The school has various subject area satellite collections which are managed by the library staff.

The teacher-librarian felt that the teachers were not as information literate as they could be, and if the students were not exposed to the skills of the teacher-librarian those information literacy skills would not be taught. She places a high emphasis on using graphic organisers and developing notemaking skills, so that students do not develop a cut and paste mentality. She felt class teachers have a heavy workload and need as much assistance as can be provided to them. She makes resourcing the units of the teachers one of her high priorities.

School B respondent is putting things into place so that the school wide network and the library will still run smoothly when she retires at the end of the year. Most of the year to date has been spent in making sure processes are correct and that those who will be carrying on in the school know how the things are set up.

Additional roles and activities include the Book Club, MS Readathon, and Book Week activities will see new displays in the library to make the library a focus for the school. The children are involved in a story writing competition which is coordinated by the teacher-librarian. She tries to encourage the children to write as they have not traditionally performed well in the writing aspect of the Year 3, 5 & 7 tests.

School B respondent felt a major challenge for her at the moment was to maintain her enthusiasm, and this is a very different answer than what she would have given this time last year before she had made the decision to retire. She is aware that there is lots of exciting professional development around but cannot see the need for her. She is still praying that another well-skilled teacher-librarian will replace her.

School B respondent alluded to the low socio-economic status of some of the students who attend the school. There are times when purchases from Book Club are beyond the means of some families.

Additional interactions with the local community included articles in the school newsletter. Many helpers come to the library and over her long association with the school she has built a rapport with many parents. She has formed relationships with two of the local council libraries to supplement the resource needs of the school library. The school is not within walking distance of the local libraries, so providing direct access for the students is more difficult. Occasionally some of the children's school work is displayed in the local library.

The technology at the school is adequate for their needs. There is a computer lab with 18 new computers in it. The library has 4 OPAC terminals with internet access. The library is available all day for the students and at most times of the day there will be students from classes working in the library. The teacher-librarian uses a Mimeo whiteboard in the library.

School B respondent uses both a process and an integrated approach for the teaching of information literacy. As teachers have less time for planning the approach has become process orientated. She has structures and timelines for introducing particular skills to the students. She introduces the generic structures that she knows the students will require at each year level. Part of this knowledge comes from being at the school for some time, and understanding the needs and teaching strategies of the class teachers. Now that the school has a HOC most of the planning is done with her. As time to complete all of the requirements for teachers is limited, they just do what they can to get the job done.

In regard to the information literacy skills she observes in the students, School B respondent says she can see some development in the skills of the students. She uses the data projector to demonstrate to the students and maintains a structure for the students in always using a graphic organiser for their notemaking.

In strategies to measure the success of the strategies School B respondent has not given much thought about how she would go about doing this, but thought it would be a good idea to have formats in place to easily measure the success of the students. She does measure how many books are borrowed by the students. In observing The Rubric for Appraising an Information Literate School Community (Appendix B.1) she considered that she would really have to advocate that these measures were in place for her replacement.

School B respondent felt that the activities of the teacher-librarian had an impact on the literacy of the students. Her own reading of the books in the library and making personal recommendations to students and teachers she felt had the most impact.

In regard to the collection of data School B respondent used to regularly do surveys but they occurred less frequently and suggested that time again was a factor. From the ALICE database information was collected about the students' use of the library and certificates were awarded to the most prolific borrower. She also generates data on the classes who overall borrow the most resources. This gives her some background in trying to meet the needs of the teachers of those classes. Feedback from the teachers is mostly informal and the comments she notes are usually positive. She acknowledges that the staff values her input and role but is not sure that the school principal places the same value on her skills. She would like to have confirmation that she is valued.

In the planning and development of the school the teacher-librarian used to have a committee for the library, but has found as teachers have become overloaded the committee is now reduced to just her. She is a member of the budget committee, but did not feel she had a lot of input in the final results of the budget. As a staff member she felt her opinion was valued.

This teacher-librarian's role as a leader of professional development is something she has stepped back a bit from in the last year. She still provides any assistance that is required but tends to now leave it to those who make the requests. She feels she has lost the energy to keep driving the change and keep developing the skills of teachers. This year she has not been involved in professional development for herself, mainly due to the retirement plans.

Aside from the collection development of the library School B respondent is involved in resourcing the other collections in the school.

Although the library has access to two library aides, support time has been reduced this year. One of the aides is largely untrained and cannot be left unsupervised in the library. The teacher-librarian has been left to train the aide, but has a full teaching load on the day that the aide has been allocated to work in the library. On one day per week there is no aide in the library so that when the teacher-librarian is involved with a class there is no one to take care of other requests, including answering the telephone.

Summary of School C

The teacher-librarian at School C has been a teacher of home economics for many years. This is her first position as a teacher-librarian and has recently completed her Post Graduate Diploma in Teacher-Librarianship. She has held the position for 4 years. At the time of the interview she was relieving as the deputy principal, a role she has been asked to perform in the past. The library will be supported in her absence, with additional aide time and a class teacher to work with the students. She will be available to provide any assistance that is required while still in the deputy principal position. As a teacher-librarian, School C respondent sees that her role has three compartments – curriculum, library management, and literacy across the whole school. She included information literacy with literacy and it was something she included when she worked with teachers. She considers that she still has a lot to learn and does not see herself as a school wide advocate for the training of information literacy in the teachers as well.

School C respondent felt very strongly that the library should be 'providing a service for the students and the teachers, both for information and for what you actually have in the library that caters for their needs'.

She also supports the activities of the school by being involved in sport, cross country, athletics and swimming. She does the Year Book. She sets up most of the functions, catering and visitors to the school. She has some involvement with the school-wide network as there is a computer lab adjoining the library. She manages bookings and the laptops. She provides assistance to teachers in

the lab when necessary. She is the first point of call for troubleshooting IT problems. The school has a full time computer network technician so she passes things on fairly quickly.

Time was the most important challenge facing this teacher-librarian at the present. 'Getting the right amount of time to do the different parts of my role'. The managerial side of the library often is left, but she is conscious that when teachers make a request, that this is done very quickly. All of the library staff meet the teachers requests straight away. Teaching is sometimes 'a bit flying off the seat of my pants.....there's something I could do more there.' The students enjoy coming to the library and she takes a strong literature focus with many lessons as she feels this is something teachers do not have time and sometimes the expertise and knowledge of.

The year one children are encouraged to join the local council library which is within walking distance of the school. She sees the local library as a support for their school. Further community involvement is with the Parish and the library and its equipment is often used.

The state of technology is about as up to date as it can be. There are 3 OPAC internet computers in the library. Most of the computers are in the lab and are mostly under 5 years old. The school has a common server so the teacher-librarian does not have to manage backups etc.

Information literacy takes a combined approach of process and integration. In working with the classes the teacher-librarian 'usually sees what the need is.....so that its not just an add on...it's part of what they do' She works the library program to suit meet those needs. She is flexible in the way she works with teachers, sometimes assisting in the computer lab and sometimes splitting a class with the class teacher so that the students can be involved in more than one activity. The teacher-librarian observes a variety of skills in the students and what she observes then directs the learning. As she works more actively with the students she is working to coordinate the skills across year levels. School C respondent thinks there are some skills that need to be specifically taught and that teachers still need a lot of professional development to enhance their own internet searching and information literacy skills.

School C respondent feels she has an impact of the general literacy standards of the students, but it may be difficult to measure her input. She does provide literature focus lessons and helped to structure a literacy policy for the school and feels she has a role in supplementing that.

In measuring her value and assessing her impact in the school, School C respondent does a questionnaire of the staff every year. She asks how she can improve, what activities went well, and asks the staff to critically evaluate the activities of the library. She feels she has a good relationship with staff. She provides data from the ALICE database for teachers about the borrowing habits of students. She takes note of the top 100 books borrowed, but admits that she probably uses about a quarter of the reporting capabilities of the ALICE system. The Rubric for Appraising an Information Literate School Community for School C is at Appendix C.1.

To interact with the community the teacher-librarian always places an item in the school newsletter, and tries to make the library visually inviting. She tries to make the library accessible to everyone and feels the library has a pretty good connection with the school community. The library runs Book Fairs and Book Club, she goes to the P&F monthly meetings.

School C respondent feels she has a 'pretty good' professional standing and recognition in the school community. She has good support from the school principal and the library budget is very adequate. Whenever there is anything extra that is required, such as library shelving there has been no problem in provisioning these.

In regard to the in servicing of staff at School C this is usually managed by the school administration. While she is in the acting deputy position she feels she will take a greater role in

staff professional development. She does do incidental professional development for staff when they require skills to satisfactorily complete units of work. These are usually to do with skilling staff to use particular pieces of software.

In regard to decision making School C respondent feels that her opinion is valued and where possible the needs of the library will be met. The teacher-librarian manages and resources the collections for most of the other curriculum areas of the school.

In regard to support staff School C respondent feels that her staff is very efficient and the processes are well streamlined. Everyone is aware of their roles and tasks and everything gets done. She does not have to rely on volunteer helpers. Although she is aware she is probably entitled to more time in regard to the school population, she feels the support time is adequately covered.

Summary of School D

The teacher-librarian at school D also works as the Curriculum Coordinator for 2 days a week. She ensures that information literacy is embedded into the teaching and learning she plans with each teacher. This school has a full time teacher to take classes for ICT and the School D respondent also integrates ICT processes into the planned units. Information literacy is fully integrated and is sequentially arranged and taught across each year level. A diverse range of searching strategies is beginning to be observed in the students. This library does not have internet access for the students but these students do have internet access in their classrooms and are also supported by the ICT teacher.

School D has a supportive school administration. The teacher-librarian is not burdened with many other roles in the school that takes away from the main focus of working with teachers, managing the resources and teaching in the library.

School D respondent has a strong managerial role in the school, and has written applications for government funding, lead focus groups to produce the new report card framework, worked to maintain the schools accreditation, and developed the framework and structure for planning with teachers and assessment of students. She leads professional development of staff and plays a leadership role in staff meetings.

School D respondent places a high emphasis on encouraging students to read. She ensures that the library and its resources are accessible to the students, maintaining open times outside of school hours and during the meal breaks. Students have access to the library at any time during the school day. She selects resources which will be of interest to the children and will encourage them to read. She sees access to the library resources is for reading and enjoyment.

The resources for the whole school are managed through the library, and the library aide has library technician's qualifications. The library aide manages the library database, the cataloguing of resources, the processing and maintenance of the resources and the day to day management of the library. She is efficient, well skilled and works largely unsupervised.

School D - what it is doing well

The Henri Hay Oberg Rubric shows that School D (Appendix D.1) is reaching the Advanced sector in most areas except for ICT. They have a plan in place to address this shortfall and it is most likely that within a short period of time this school will be able to address this shortfall.

It would be interesting to track the changes in this school as its population grows to see whether it can maintain its staff, budget and access to the library at the same proportional rate and still maintain the above average figures on the National testing.

Table 9: Positive attributes of School D

The library is staffed by qualified professionals	✓
Provision of adequate time for support staff	✓
Supportive School administration	✓
The library has an adequate budget to resource the curriculum	✓
The teacher-librarian is not burdened with additional roles in the school	✓
The teacher-librarian has access to teachers for planning	✓
Sequential development of information literacy	✓
Information literacy is embedded in the teaching plans of the teachers	✓
Assessment strategies include information literacy skills	✓
Literacy and the enjoyment of reading is a focus of the library	✓
The library location is accessible to the students and staff	✓
The library is open and accessible to staff and students for the whole school day with some before and after school access	✓
The library is a meeting place and focal point of the school	✓
The teacher-librarian plays a role in professional development of staff	✓
The teacher-librarian is recognised as a leader in the school	✓
The teacher-librarian monitors the progress of the library with surveys and questionnaires and seeks feedback on the library activities	✓
The teacher-librarian reports to school administration on the activities of the library	✓

Conclusion

It is acknowledged that this pilot study has a small sampling, but early findings from the interviews and The Rubrics draw strong links to the issues and findings of the existing research, especially to that of Hartzell (1997a), Hay (2000), Lonsdale (2003) and Todd (2001). This possibly indicates that the schools in this pilot study are experiencing the same issues and constraints that the existing research has identified. Although Schools A and B are from the government sector, the issue here is not private verses government schools in the provisioning of better educational outcomes.

Schools C and D demonstrate the highest overall score and also higher allocations of support staff, adequate budgets to support the curriculum needs of the school and a supportive school administration. They held greater professional standing with the school community as well as having more consistent access and interaction with the staff. The teacher-librarians from Schools C and D did not have additional roles to perform. They had more time to do their job well – to provide a library and information service which supported the school community.

The teacher-librarians at Schools A and B perform additional roles in their school, which may support the schools ICT needs, but has the effect of taking the teacher-librarian away from their core business. The libraries of Schools A and B are below the benchmarks in many other areas and it could in part be related to the additional responsibilities not enabling these teacher-librarians to function in a more supportive and professional role in their libraries. Their time is limited and to accomplish the extra workload some library administrative activities have to be cut. These may be survival tactics on the part of the teacher-librarian, but they are not in the long term interests of the school community in the provision of a dynamic library and information service.

In comparison, School D does demonstrate many positive characteristics that can support the concept that a well resourced and supported school library can have a positive effect on the literacy of students in the school. School D also has a smaller student population which is a factor not investigated in this pilot study. It could be that schools can provide better delivery of service with smaller student populations; or it could be possible that a particular range of student population is

the optimum for student achievement. The results of further investigations would have more credibility if the National Reading test results from each school could be compared over a period of years. This would enable the tracking of the same cohort of children through the year 3, 5 and 7 tests. To further investigate the impact that the teacher-librarian has on literacy levels of students further research may also need to include schools which do not have teacher-librarians, or those schools where a teacher-librarian is not actively involved in the teaching of students and interacting with teachers. The issues raised here indicate the need for further investigation.

Discussion

Introduction

The aim of this pilot study was to establish whether the teacher-librarian can have a positive impact on the literacy of students when measured against the Year 3, 5 and 7 national tests. The pilot study involved investigating the activities of four teacher-librarians in a mix of government and non-government schools. As this pilot research progressed it became evident that the impact of the teacher-librarian could be measured using a range of measurement strategies. The Year 3, 5 and 7 national test results provide a quantitative measure of the students' literacy levels. The strategies of evidence-based practice as they are applied to librarianship are demonstrating trends which use qualitative measures and these were used in the pilot study to further verify the teacher-librarian's impact on student literacy. In using semi-structured interviews it should not be surprising that further issues emerged as the interviews were conducted revealing some common problems that teacher-librarians experience in the execution of their role. The addressing of these common problems points to areas of possible further research. The research for this pilot study comprised of four elements - the literature review, the case study, the methodology and the findings. The literature review and case study reinforced and supported the initial findings of the pilot study. This discussion will draw upon all the research elements to draw some conclusions and point to areas requiring further investigation.

Well Resourced School Libraries

The findings of this pilot study provide some support for the notion that a well resourced and supported school library can have a positive effect on the literacy of students in the school. For a school library to be well resourced requires an adequate budget to supply the resources to support the teaching and learning needs of the school community. Print and non-print resources should be included to support research and recreational needs. In supporting non-print formats the technology hardware and infrastructure should adequately allow access to these materials. For the teacher-librarian to provide these resources requires professional links to be made with those in the school administration who formulate the school budget, and with those who manage the school wide network. In a school the IT and the library are usually the two largest line items of the budget. The teacher-librarian needs to look ahead and anticipate the future needs of the library users by providing planning projections to cater for the needs of a user-centred information service.

Hartzell (1997a) refers to the indifference of school administrators in the resourcing of school libraries. Teacher-librarians cannot rely on the support for the school library because there is a feeling that a library just must be. In an era of measurement and standards teacher-librarians will be called upon to provide evidence that the budget allocation for resources is justified. In an education climate with many new initiatives and where schools are increasingly called upon to address social needs in the community, the library budget is a competitor in the whole school budget breakdown. In fact, the position of the teacher-librarian may be 'traded-in' to address other school needs perceived by the school administration to be of greater importance. Many school administrators just do not understand the value and educational potential of libraries and librarians. This discussion is going to again draw on the findings and recommendations made by Lance (2001) on the impact of school library media program on academic achievement:

- Professionally trained and credentialed school library media specialists do make a difference that affects student performance on achievement tests.
- For library media specialists to make this difference, the support of principals and teachers is essential.

- Library media specialists cannot perform their jobs effectively unless they have support staff who free them from routine tasks and enable them to participate in a variety of one-to-one and group meetings outside the library media centre.
- Library media specialists have a twofold teaching role. They are teachers of students, facilitating the development of information-literacy skills necessary for success in all content areas, and they are in-service trainers of teachers, keeping abreast of the latest information resources and technology.
- Library media specialists also must embrace technology to be effective. They must ensure that school networks extend the availability of information resources beyond the walls of the library media center, throughout the building, and, in the best cases, into students' homes. (p.3)

Staffing with Qualified Professionals

Learning for the Future (2001) has been a reference source for this project to provide benchmark recommendations and points of comparison for the schools in this pilot study. The staffing recommendations indicate 'Staffing is the crucial factor in the provision of effective information services in schools, and a range of expertise is required to form a dynamic information services team. Teacher-librarians, network managers, information technology coordinators, library technicians, computer technicians and clerical staff play an integral role in achieving the learning outcomes that are the goal of schools' learning programs' (Australian School Library Association & Australian Library and Information Association, 2001, p.59). The person managing the school library should be a qualified teacher-librarian. A qualified teacher-librarian holds recognised teaching qualifications and qualifications in librarianship. Their qualifications enable them to have professional membership to ALIA. Likewise other roles that are incorporated into the realm of the library should also be staffed by professional staff with qualifications. The person managing the school wide network should have qualifications and experience; a school in the early stages of implementing ICTs into the curriculum should designate a teacher as Information Technology Coordinator; accessioning, processing and cataloguing of resources should be carried out by qualified and skilled library technicians who are eligible for ALIA membership (Australian School Library Association & Australian Library and Information Association, 2001). These recommendations are also adopted by The State Library of Queensland (2007) and the Queensland Department of Education, Training and the Arts (2007). One of the recommendations made by Lance (2001) which can lead to improved student outcomes was to have the library staffed by professionally trained and credentialed staff.

The quantitative and qualitative measurement strategies applied to School D also provide evidence that it is providing a school library service which caters for the needs of the school community. It has the highest literacy scores in all levels of the Year 3, 5 and 7 national tests. School D, in the Findings of this pilot study provide staffing which most closely aligns with the recommendations of *Learning for the Future* (2001). This school is providing its school community with professional and qualified staff. The other three schools in this pilot study also staffed their libraries with qualified teacher-librarians and while not all of the library support staff were qualified library technicians, they were all well trained and performed their roles well. The libraries were well managed, and the teacher-librarians and the services the libraries provided were acknowledged by the school teaching staff.

Support of Principals and Teachers

'Principals should support school libraries because it is both their students' and their own best interests to do so' (Hartzell 2003, p.1). The research indicates that quality library programs have a positive impact on student learning and committed teacher-librarians can enhance their own administrative practice. School principals have an impact on school library programs as much as quality teacher-librarians, because they influence and control the eleven characteristics of effective school libraries (Lance 2001, in Hartzell 2003). The first five items of the eleven characteristics are controlled by budget – collection size, service hours, staff size, employing full-time qualified

teacher-librarians and adequate support staffing. Another aspect to be considered is the role the principal plays in creating a school environment which values the interactions and activities of the teacher-librarian. ‘.....principals powerfully affect the extent to which information literacy instruction is embedded in the body of the school’s curriculum’ (Hartzell 2003, p.3). The power of the school principal is evident in the structuring of school committees and management teams. It is principals who provide leadership opportunities for their staff; it is their decision who will interact with parent groups, district committees and community organisations. If the school principal does not perceive the teacher-librarian as a leader these opportunities for the teacher-librarian to interact with the school community will be lost. The eleven recommendations of Lance (2001 in Hartzell 2003) identifies the following characteristics of effective school libraries as having:

1. Large, varied and up to date collections.
2. One or more full-time qualified librarians.
3. Library support staff large enough and skilled enough to free qualified librarians from routine clerical duties and to allow them time to teach, to collaborate with teacher, and to engage in leadership activities outside of the library.
4. Free student and teacher access to the library during and beyond school hours.
5. Networked computers providing student and faculty access to catalogues, licensed databases and the Internet.
6. Budget adequate to support the previous five items
7. Staff commitment to teaching.
8. Individual student library use well beyond scheduled class visitations.
9. Information literacy instruction integrated into the curriculum.
10. *Librarian characteristics:*
11. Extensively collaborates with teachers.
12. Extensively involved in curricular, organisational, and operational school leadership activities outside of the library.

(p.2)

The effects of the eleven characteristics of an effective school library are cumulative and integrated. All of the eleven characteristics must be in place; addressing some of the characteristics but not all of them, will not provide an effective library and information service. The research undertaken in this pilot study aligns the findings of Lance (2001 in Hartzell 2003) with the positive attributes of School D (Table 9). School D, which has attained consistent above average levels of student achievement in national literacy tests was able to demonstrate that it is close to attaining all of the eleven characteristics recommended by Lance (2001 in Hartzell 2003). The lack of network computers is being addressed, (identified in Appendix D.1), the size of the library collection is a focus of the budget and as the school student population increases adequate staffing by qualified teacher-librarians will be a crucial factor in School D maintaining its above average standards.

Table 9: Positive attributes of School D

The library is staffed by qualified professionals	✓
Provision of adequate time for support staff	✓
Supportive School administration	✓
The library has an adequate budget to resource the curriculum	✓
The teacher-librarian is not burdened with additional roles in the school	✓
The teacher-librarian has access to teachers for planning	✓
Sequential development of information literacy	✓
Information literacy is embedded in the teaching plans of the teachers	✓
Assessment strategies include information literacy skills	✓
Literacy and the enjoyment of reading is a focus of the library	✓
The library location is accessible to the students and staff	✓
The library is open and accessible to staff and students for the whole school day	✓

with some before and after school access	
The library is a meeting place and focal point of the school	✓
The teacher-librarian plays a role in professional development of staff	✓
The teacher-librarian is recognised as a leader in the school	✓
The teacher-librarian monitors the progress of the library with surveys and questionnaires and seeks feedback on the library activities	✓
The teacher-librarian reports to school administration on the activities of the library	✓

Schools are defined by classroom teaching and learning with teachers and administrators being at the core of it. Despite teacher-librarians also holding teaching qualifications and were first class room teachers before attaining additional qualifications in librarianship, ‘many teachers view librarians more as support resources rather than colleagues’ (Hartzell 1997a, p3). Gaining the support and recognition of teachers is necessary to change perceptions that the teacher-librarian is a position which fills in where necessary. Teacher-librarians need to build positive and influential partnerships within their own work environment. Creating strong alliances with teaching staff through collaborative teaching episodes can work to create future positive support.

All of the respondents of the pilot study indicated that they had positive working relationships with the teaching staff. School D had created a strong planning and collaborative relationship, enhanced by the Curriculum Coordinator role also undertaken by the teacher-librarian. Schools A, B and C considered that their role would be more effective if they had greater access to teachers for planning, but still considered they were able to produce productive teaching and learning alliances. All the respondents felt their activities were valued by the teaching staff.

Support Staff and allowing the teacher-librarian to get on with the job

The provision of adequate and well trained support staff allows the teacher-librarian time to work with teachers and students in an active and supportive way. Processing new resources, checking accounts, reshelving and circulating books, addressing staff and student requests efficiently are just some of the everyday management tasks that well-trained support staff can do to assist in the management of the school library. With the ‘backroom management’ under control the teacher-librarian is then able to work with students and teachers. Students can be confident that at any time of the day the information services of the library will be accessible to them. Teachers will have the services of the teacher-librarian to assist in their planning and resource needs. Just as importantly the teacher-librarian has time to access teachers to provide teaching opportunities to embed information literacy and to promote reading in general. They have enhanced opportunities to work with teachers to provide the best educational outcomes for students.

The respondents in the pilot study unanimously identified time to get everything done as a barrier to providing an efficient information service in their school community. All respondents had praise for the work ethic and skills of their library aides. While School D had a support provision which was close to the benchmark recommendations, time to get everything done was still a concern. It may be that since *Learning for the Future* was published in 2001, the expectations of the services a school library and its teacher-librarian can provide are broader in 2007. All respondents mentioned activities they were involved in which took them outside the library, and as they reach out into the school community it could be that even more support time is required.

Embracing Technology

Elliot’s (2005) dire warning of a ‘looming culture class that we ignore at our peril’ is something that teacher-librarians need to consider. Teacher-librarians have embraced technology; they have automated library systems and many teacher-librarians are school ICT coordinators and leaders of professional development in the area of developing ICT skills in their staff. The pilot study investigations provided additional evidence of the leadership roles that teacher-librarians provide in

the delivery of ICT skills to students and teachers. Schools are now finally providing technology infrastructure and hardware that can deliver learning activities with high levels of ICT integration. In general, teachers are becoming well skilled in using software applications, but the students though have moved well beyond the skills of the teachers. The difference between teachers and students is more to do with the way that they use applications. 'Today's young people live in a world where digital technologies are embedded in most aspects of their lives – except in their classrooms' (Elliot 2005, p.2). The students use the online tools and non-mainstream tools in a collaborative information sharing way. Their cultural tools are within easy reach. They use blogs, wikis, Youtube, share their images and their lives in an online world. 'Teachers no longer know what learners know and are independently doing and learning' (Elliot 2005, p.5).

'These collaborative tools are powerful because they connect reading and writing' (Allison, 2005). There is online evidence that some librarians and teacher-librarians have adopted this collaborative writing environment. Levine's *Shifted Librarian* blog is concerned about how this online collaborative trend in our students will affect libraries. Although the teacher-librarians in this pilot study had involvement the ICT management, delivery and to some extent the planning and integration in learning programs, the notion of online collaborations was absent in all interview responses. The teacher-librarians in this pilot study have recently been introduced to the concept of online collaboration as a professional sharing tool. The teacher-librarian from School B when asked about what challenges she faced replied, 'Well actually you challenge me, Ann' (School B respondent, personal communication, 30 April, 2007). This challenge is one to learn new ideas and grasp new concepts in the field of teacher-librarianship. The challenge she was referring to was the wiki using the EDNA tools which the researcher established for the use of the teacher-librarian network. This is a shared document repository and noticeboard, but has the potential to be used even more as the teacher-librarians gain skills and confidence in using it. The teacher-librarian network has been enthusiastic in their response and use the EDNA wiki now in preference to sending lots of emails. This positive development of the teacher-librarians skills has already seen some integration of the collaborative writing concept in the work they are doing in their schools with the students. Exposing teachers and teacher-librarians to online collaborative interactive tools is an area for further professional development and using the tools as part of their own professional practice is a positive first step.

Developing Information Literacy

In very simple terms it may be thought that anyone who can use a search engine may be said to have developed information literacy skills. Rarely do online searchers question the validity of information from an online search. Often Google is the only search engine used, and limited search terms are applied. Teacher-librarians well understand this comment from an unknown source 'Google rocks, but it is not the only band in town'. To compound the problem, Bundy (1998) reports that 'graduating teachers are in the main as unaware of these [information] issues as they were fifty years ago' (p.13). An observation of all the teacher-librarians interviewed in the pilot study noted the limited search skills that teachers applied in sourcing information online or in the library in general. With this in mind teachers in general are not well skilled to develop information literacy skills in their students. The development of diverse strategies to find and validate information from a variety of sources is the special expertise of the teacher-librarian.

Teacher-librarians with their dual qualifications are ideally placed to lead in the development of information literacy. Their pedagogical understandings enable them to guide and demonstrate good teaching practice; to embed information literacy into the teaching and assessment programs of the class teacher. The teacher-librarian is a partner in teaching and learning. "...information literacy is a primary, not a peripheral, educational outcome' (Bundy 1998, p.3). Information literacy is not an isolated learning experience. Students gain life-long information literacy skills when an integrated approach which incorporates assessment strategies is built into learning programs. (Bruce,

Edwards, and Lupton, 2006), (Australian School Library Association, & Australian Library and Information Association, 2001), (Bundy, 2004), (O'Connor, 2007), (Todd, 1996, 2006).

The teacher-librarians who provided interview responses in this pilot study all recognised the benefits of taking an integrated approach to the teaching of information literacy. The interview response from School A said 'if...you can get involved in the planning of their (the teachers) units of work to embed this information literacy into their normal program. It's going to be more effective obviously' (School A respondent, personal communication, 10 April, 2007). At School D where the teacher-librarian was also the Curriculum Coordinator the integration of information literacy into learning and assessment activities was a normal part of the planning process. Schools are busy places and teachers are busy people. In an overloaded day, time will restrict the teacher-librarian's access to the teachers for planning; this is when the integration of information literacy becomes fragmented. Point number 3 of Lance's eleven identified characteristics of an effective school library is a two fold one where the library has enough support staff to enable the teacher-librarian to collaborate with teachers and to engage in leadership outside the library (Lance 2001, in Hartzell 2003, p.2).

The Library as a Place in the School Community

To overcome accessibility to the library collection after the school bell goes, many teacher-librarians provide before and after school opening times. School staffing rarely makes provision for extended opening hours for the school library, and there comes a time when the library staff need to go home. The provision of online services extends the library service into students' homes; when the homework and research projects are being done and parents are baffled by the homework assignments, the school library can be of great assistance if an online presence is available. The library database is one source of information, but the library can 'value add' its services with a website that links to reliable online databases as well as a range of websites which have been previewed by the teacher-librarian. 'Value adding' can also include homework helpers and instruction guides on how to structure a writing task, create a MindMap, provide examples of graphic organisers, or provide instruction on how to put a PowerPoint presentation together.

There are many advantages of having a virtual library to enhance the physical library space. A high quality virtual library will provide better information faster than a general internet search. A virtual library delivers useful and accessible resources; reinforces the library's position as an authoritative information source; encourages the students to be adept and confident users of information; and provides cost effective scalable resources (*Reasons for offering a virtual library*, 2007).

An online library database is common in the public library sector. Schools though display less consistency in this regard. Secondary schools are generally more likely to provide links to the library database and a website with useful links for research and homework. Some secondary schools provide an online OPAC which can be viewed off campus. Very few primary schools provide an online library database; it is more likely that the primary school website will provide useful teacher-librarian reviewed weblinks and homework assistance. None of the schools involved in the pilot study have a library presence on the school website. None of these schools provide an online OPAC, teacher-librarian selected weblinks or homework helpers.

The Case Study of this pilot research investigated how a school could place its library catalogue online. Putting the library database online has seen many positive aspects for the two schools involved in the Case Study. These libraries now have a focus and are able to reach their school communities. While the webpage for the Mt Samson library is still in the planning stages there is still more potential that the library can provide an even better information service to its school community. The online OPAC at Mt Samson State School works to provide a full time, open-all-hours library service with part time staffing. The students have developed skills in the online use of

the library database and have transferred these skills to the use of the local shire council library database. They now search online databases and have come to a better understanding of how to structure search terms. A later development since the catalogue has gone online is that the resources that were part of the parent library, previously managed by the P&C are now catalogued and managed by the school library staff. A budget allocation has been made by the P&C to add more resources to the parent library. Those parents using the parent library are now registered users of the school library and have been shown how to use the online OPAC. They now use the online catalogue with their children to source information. All of the items outlined in *Reasons for offering a virtual library*, (2007) were apparent when the online OPAC was made available to the school community. Improving accessibility to the library with the provision of an online presence is one of the aspects identified by Lance (2001) that can lead to improved student outcomes.

Effective Measurement Strategies

Research on evidence-based practice (EBP) carried out by Booth and Brice (2004), and Koufogiannakis, D., & Crumley, E. (2006), raising the awareness of its application to the context of Australian teacher-librarianship by Lonsdale (2003), as well as the practical applications of the strategies in the research of Todd (1995, 2001) and Hay (2006) do not seem to have reached many mainstream practicing teacher-librarians. Past and current research in the field of teacher-librarianship, the case study and the pilot study investigations of this research project indicate that both quantitative and qualitative approaches to measuring school library services are necessary. Teacher-librarians need to embrace EBP and make it part of their everyday activity. Not only do teacher-librarians need to make a difference to the positive achievement of students, they need to **demonstrate** these successes.

Quantitative measures can be used by teacher-librarians to measure their collection size, staffing levels and funding against established benchmark documents such as *Learning for the Future* (2001) and documents from overarching bodies such as State Library of Queensland (2007). By measuring against benchmarks deficits can be identified and lobbying for specific improvement can take place (Ryan, 2004).

Teacher-librarians who have been in the profession for some time will probably recall from their studies in teacher-librarianship that they needed to advocate their position, share information with teaching colleagues, perform annual stocktakes and provide figures on the additions and losses to the collection. In the past these activities may have been sufficient, but if the teacher-librarian has any future role to play in the school they need to be actively gathering evidence of their achievements especially in making connections with student achievement. Advocacy alone is no longer enough. In the words of Todd (2001).....‘I believe we need to focus on three things: connections, not collections; actions, not positions; and evidence, not advocacy’ (p.2). Todd (2001) is also convinced that a major limiting factor of the profession is the mindset of teacher-librarians themselves – they need to embrace EBP as a tool which demonstrates that the construction of knowledge is at the heart of the work of teacher-librarians. Moreover, Todd (2001) indicates that the evidence should be local and ‘immediately derived from the day-to-day teaching and learning going on in a specific school’ (p.10). For EBP to be successful in the school library setting research or evidence needs to be coupled with the professional expertise and reasoning of the teacher-librarian to implement effective teaching and learning strategies. Gathering of evidence needs to be systematic and provide information that the teacher-librarian is having an impact on the overall mission and goals of the school. Advocacy, position and collection information does not demonstrate such an alignment.

The lamentations of Todd (2001) were reinforced in the pilot study investigations. None of the interviewees applied effective EBP strategies. All of the interviewees were aware that measurement strategies and statistical data could be of value to them, but rarely was data collected and presented to school administrators. While anecdotal evidence was available and all the interviewees relied on

this evidence as reassurance that they were meeting the needs of staff; it was not systematically gathered and recorded. One school did survey staff on a yearly basis to gather information on the future possible needs to be met. The term evidence-based practice was not referred to by any of the interviewees, and its use was not part of their everyday activities.

While apparently unaware of EBP, all of the interviewees from the pilot study could see the value of the *Rubric for Appraising an Information Literate School Community* (Henri, Hay, and Oberg 2002). The Rubric could have been interpreted by the respondents as a confrontational evaluation piece, if the researcher had not first explained the possible benefits of using such a strategy and how it could be used in collaboration with the school administration to identify the areas of deficiency and to enlist the support of the school administration in meeting these needs. For the interviewees completing The Rubric was a valuable and reflective experience and has raised their own awareness of issues they need to address. There is a need to establish a solid evidence base within the profession of teacher-librarianship. Teacher-librarians are not academics; they are busy often overloaded people. The strategies to provide evidence of their practice need to be simple everyday tools that can gather meaningful evidence of their positive impact on student literacy and learning. There is a difficulty in developing easily administered measurement strategies for the less tangible learning experiences. This is a possible area of further investigation to provide a practical, low cost, easily administered evidence-gathering toolbox as well as educating the teacher-librarianship profession on the need to use EBP strategies.

Stating the Case for School Libraries - the School Principal Dynamic

Teacher-librarians may lament that the services offered through their school libraries are undervalued. School libraries are a place of changing focus, attempting to respond to the changing information and recreational needs of its school community. 'While many teacher-librarians are keen to integrate technology and popular culture into the learning experience, they do not always have the skills or support to do so. Furthermore, there is strong evidence to suggest that the library, as an essential but sometimes undervalued space within the school is literally shrinking' (Brooks 2007, p.21). Teacher-librarians need to demonstrate their value, 'no-one is going to rescue school librarians [and the fact that they are undervalued] but themselves' (Kenney 2006, in Brooks 2007, p.22).

The interviews from the pilot study indicate that all of the teacher-librarians made strong connections with the students and to most of the teaching staff. To a greater or lesser degree, they have formed good connections with the local community. The greatest variance in connection occurred in their interactions with the school administration. The respondent from School D was the only teacher-librarian interviewed to formally report to the school principal on a yearly basis the activities of the library and to outline and cost future needs. The three other respondents took a less formal approach, relying on verbal communication, but when it comes to allocating line items in school budgets, hard evidence is necessary.

Budget allocation was a common concern of all the respondents of the pilot study, but of even greater concern is that the position of the teacher-librarian is under threat in two of the schools in the pilot study. Despite performing duties well beyond their role description, as these two teacher-librarians retire there is the very real possibility they will be replaced with a person with an ICT focus who may not have training as a teacher-librarian. These two schools run the risk of repeating the blunders of many other schools by reducing the library to a computer lab in the belief that a bank of computers will replace the expertise of a teacher-librarian (Hartzell, 1997a). This may indicate a lack of understanding, or lack of information provided to the school principal that the development of ICT skills is not necessarily the same as developing information literacy. These school principals may also be unaware of the research that indicates that a well resourced school library supported by an actively involved trained teacher-librarian can improve student literacy. Creating a strong bond and working towards the shared vision of the school is a skill the teacher-

librarian must develop. 'Teacher training emphasizes individual classroom interactions between teacher and student but seldomly involves serious study of how to work with other adults' (Hartzell 1997a, p.2). The repercussions of not reporting the activities of the school library and in keeping principals informed of current research in teacher-librarianship and student learning are enormous and long term. There should be a dynamic relationship between the teacher-librarian and the principal. The principal can be a powerful ally and can support the development of a strong library program. To gain this support the quality of communication between the teacher-librarian and the school principal is vital. Research from Hay (2006) indicates that many principals preferred verbal communication as affirmation of the productive activities of the teacher-librarian. 'Many teacher-librarians, while primarily delivering their needs, requests and concerns to the principal verbally, believed that written support documentation was an important 'backup', although this practice was not always done' Principals though were prepared to rely on the judgment of the teacher-librarian as long as the teacher-librarian demonstrated their trust was warranted (p.10). The teacher-librarian and the school principal need to work to a shared vision which is strengthened with a bond of trust and understanding.

Conclusion

The focus of this pilot study was to investigate whether the teacher-librarian can have a positive impact on the literacy levels of students as measured in the national Year 3, 5 and 7 tests for reading. To verify this quantitative measure it was necessary to establish what activities the teacher-librarians were involved in that could enhance the literacy scores. A qualitative pilot study using semi-structured interviews uncovered many instances of the positive contributions that teacher-librarians can make to literacy. Also the interviews revealed the many challenges that teacher-librarians face to deliver effective library and information services to their school community. It is possible to conclude from this small pilot study that the teacher-librarian can have a positive effect on the literacy of students when certain other conditions are in place. The findings from School D indicate the many other conditions which could have made a contribution to the ability of the teacher-librarian to have a positive impact on the literacy of the students at School D. The positive conditions at School D very closely align with the eleven recommendations of Lance (2001 in Hartzell 2003).

The literature review provided relevant background information for this pilot study, assisting in structuring the interview questions and guiding the research of the pilot study. The case study strengthened the results of the literature review in a practical way, by demonstrating that a school library and information service can reach its school community when an online information service is provided. The use of online services has become integrated into the teaching and learning aspects of the school. The findings of the pilot study have provided a local context to the existing broader U.S. and Australian research. The initial pilot study findings tend to confirm existing research that an actively involved teacher-librarian can have a positive effect on educational outcomes of students.

To confirm the initial findings of this pilot study, further research would need to identify schools which demonstrate consistently above average literacy scores on the national 3, 5 and 7 reading tests. Secondly the impact of the teacher-librarian in these schools needs to be explored. The recommendations provided by Lance (2001 in Hartzell 2003) provide a benchmark to guide good practice in the provision of an effective school library information service. In addition, the *Rubric for Appraising an Information Literate School* (Henri, Hay, Oberg, 2002) provides an overall view to identify future direction for the school library service. The use of evidence-based practice to gather evidence at a local level will add further information for future research. The literature and the initial findings of this pilot study confirm Lonsdale's (2003) findings that there is a 'need for local, evidence-based practice if the roles of the school library and the teacher-librarian in student learning are to be valued in the way the research suggests they should be valued. Such research is an important strategic tool for raising the profile and prestige of the library professionals in the

minds of policy-makers and school communities the crucial contribution that school libraries make to student achievement' (p.2).

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